FINAL REPORT

Salt Lake Organizing Committee for the 2002 Olympic Winter Games

Environmental Compliance at the Salt Lake 2002 Olympic Winter Games and Paralympic Games

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1.0 INTRODUCTION

Environmental Resources Management (ERM) was retained to support the Salt Lake Organizing Committee (SLOC) in implementing its environmental compliance program for staging the 2002 Olympic Winter Games. SLOC, ERM, and others performed environmental compliance oversight inspections and wrote permits, plans, and other environmental documents for the Olympic venues. This report documents these environmental compliance programs and activities for SLOC. It has also been prepared to meet the U.S. Environmental Protection Agency (EPA) grant requirement for a final report detailing the compliance program for the 2002 Olympic Winter Games and Paralympic Games.

2.0 BACKGROUND

SLOC was committed to protecting and enhancing the environment in the course of staging the Olympic Winter Games and Paralympic Winter Games of 2002. In 1994, the International Organizing Committee (IOC) added Environment as the third principle of Olympism to compliment the other two principles, Sport and Culture. Salt Lake City was the first host city to have had its bid evaluated according to IOC environmental criteria. SLOC acknowledges that it won its bid to host the Games in part on the minimal impacts the Games would have on Utah's environment. In 1995, SLOC's Board of Trustees approved a detailed Environmental Platform outlining how SLOC was to conduct business relative to the environment to ensure an Olympic environmental legacy. The Environmental Platform consisted of 12 primary points:

1. **Management.** To integrate environmental sensitivity into every aspect of the games in its administration through budgetary, organizational and procedural means.

2. **Environmental design and construction.** To ensure that design and use of Olympic facilities adequately assess and minimize environmental impacts and complement natural surroundings.

3. **Temporary facilities.** To ensure that temporary facilities can be reused in a manner that benefits the entire community. Also, to restore any natural areas that are impacted by the installation and removal of such facilities.

4. **Energy and water conservation.** To build facilities and adopt practices which conserve our valuable natural resources.

5. **Materials management.** To responsibly manage material selection, use, consumption and disposition to minimize environmental impact.

6. **Official suppliers, contractors, and sponsors.** To work with suppliers, contractors, and sponsors to ensure that products and the methods in which they are delivered are environmentally responsible.

7. **Cultural events and ceremonies.** To use high profile events to further environmental education and to serve as a model for environmentally responsible event management.

8. **Sports and sports organizations.** To encourage the Olympic teams and sports organizations to develop environmental messages and profiles that are suited to the sport itself and to the Olympic spirit.

9. **Environmental education.** To realize the Olympics as a unique vehicle to educate both children and adults regarding environmental issues.

10. **Transportation.** To minimize transportation impacts, their related environmental problems, encourage mass transit and other environmentally responsible modes of transportation.

11. **Lodging and food services.** To provide environmentally sensitive lodging and food services for our visitors.

12. **Environmental monitoring.** To monitor the progress of SLOC in meeting its environmental goals.

SLOC was committed under its contract with its host city to "carry out their obligation and activities…. in such a manner that they comply with applicable environmental legislation, and wherever possible, serve to promote the protection of the environment." SLOC developed an environmental compliance program to accomplish this goal. SLOC's program served as an environmental compliance demonstration project for large international sporting events in that it required tracking and measuring results against established goals. The SLOC environmental compliance program was funded by a $350,000 grant from the EPA. The compliance component of the grant was specifically allocated to three major activities: 1) the salary of the Venues Compliance Manager; 2) the cost of hiring contractors to assist with environmental compliance monitoring during the temporary venues build-out; and 3) the production of this final report.

3.0 PROGRAM PLANNING AND ORGANIZATION

3.1 PLANNING

The twelve point Environmental Platform was the basis for development of an Environmental Management System (EMS) for SLOC. While not being formally registered, SLOC's EMS was patterned after the International Standards Organization (ISO) 14001 standards. The EMS manual contains sections on environmental policy, environmental management planning, implementation, checking and corrective action, and EMS audit and review. A copy of the EMS manual is included as Appendix A. The EMS protocols ensured that SLOC personnel, its contractors, and volunteers comprehended SLOC's commitment to environmental protection and enhancement, and carried out their activities in a manner consistent with that commitment.

A series of environmental indicators, found in Appendix A, were developed to track SLOC's progress towards meeting its environmental goals and objectives. No single indicator provided a comprehensive measure of environmental performance; however, together they identified areas where progress was made and areas where there were opportunities for improvement. An Environmental Management System Checklist, also found in Appendix A, was developed to audit the EMS. The checklist was a tool designed to analyze the effectiveness of SLOC's policies and procedures.

Just as with any business that builds and operates facilities to manufacture a product or deliver a service, SLOC had environmental laws and regulations with which it was required to comply. Recognizing this, SLOC identified environmental legal requirements as a necessary part of its EMS. SLOC reviewed and summarized all the Federal and state environmental laws and regulations that could apply to construction projects and spectator events relating to the Olympic and Paralympic Games. The list on Table 3-1 provides an overview of these regulations. A more complete listing, including the applicable Federal and state regulatory citations, is included in the SLOC EMS manual and in Appendix B, Potentially Applicable Permits & Plans.

Table 3-1 Potentially Applicable Laws & Regulations

Emergency Planning & Community Right-to-know Act (EPCRA)
Hazardous chemical reporting
Occupational Safety & Health Act (OSHA)
Hazard communication
Process safety management
Clean Water Act/Various Utah Water Regulations
Storm water discharge permits for construction sites > 5 acres
Storm water pollution prevention plans and inspections
Wastewater discharge permits / Groundwater protection permits / Pretreatment permits
Section 404, dredge and fill permits
Utah stream alteration permits
Spill prevention, control and countermeasures (SPCC) plans
Spill / release reporting requirements
Public drinking water system requirements
Clean Air Act/ Various Utah Air Regulations
Accidental Release Prevention program
Preconstruction notification (New Source Review)
Utah fugitive dust control
Underground wastewater systems permitting / groundwater protection program
Utah fuel vapor emissions control
RCRA/CERCLA
Requirements for generators of hazardous waste
Requirements for generators of used oil
Spill / release reporting requirements
Underground storage tank requirements
NEPA
Proponent for Conditional Use permit on Federal land
Local Regulations
Construction noise ordinances
Hazardous materials registration
Fire codes

3.2 ORGANIZATION

The position of Venues Compliance Manager (VCM) was created in 2000 in order to address the numerous environmental legal requirements. The VCM was responsible for developing and implementing a compliance program specifically designed for a large international sporting event that involved diverse stakeholders, including multiple government agencies, non-governmental organizations (NGOs), private industry and concerned citizens.

Mary Barraco was hired as the VCM. She reported to Diane Conrad-Gleason, SLOC's Director of Environmental Programs. A chart depicting the organization of the environmental compliance program team is included as Figure 1.

The objectives of the compliance program were threefold:

1. Reduce risk to SLOC by maintaining compliance with federal, state and local laws

2. Raise community awareness regarding environmental laws and regulations

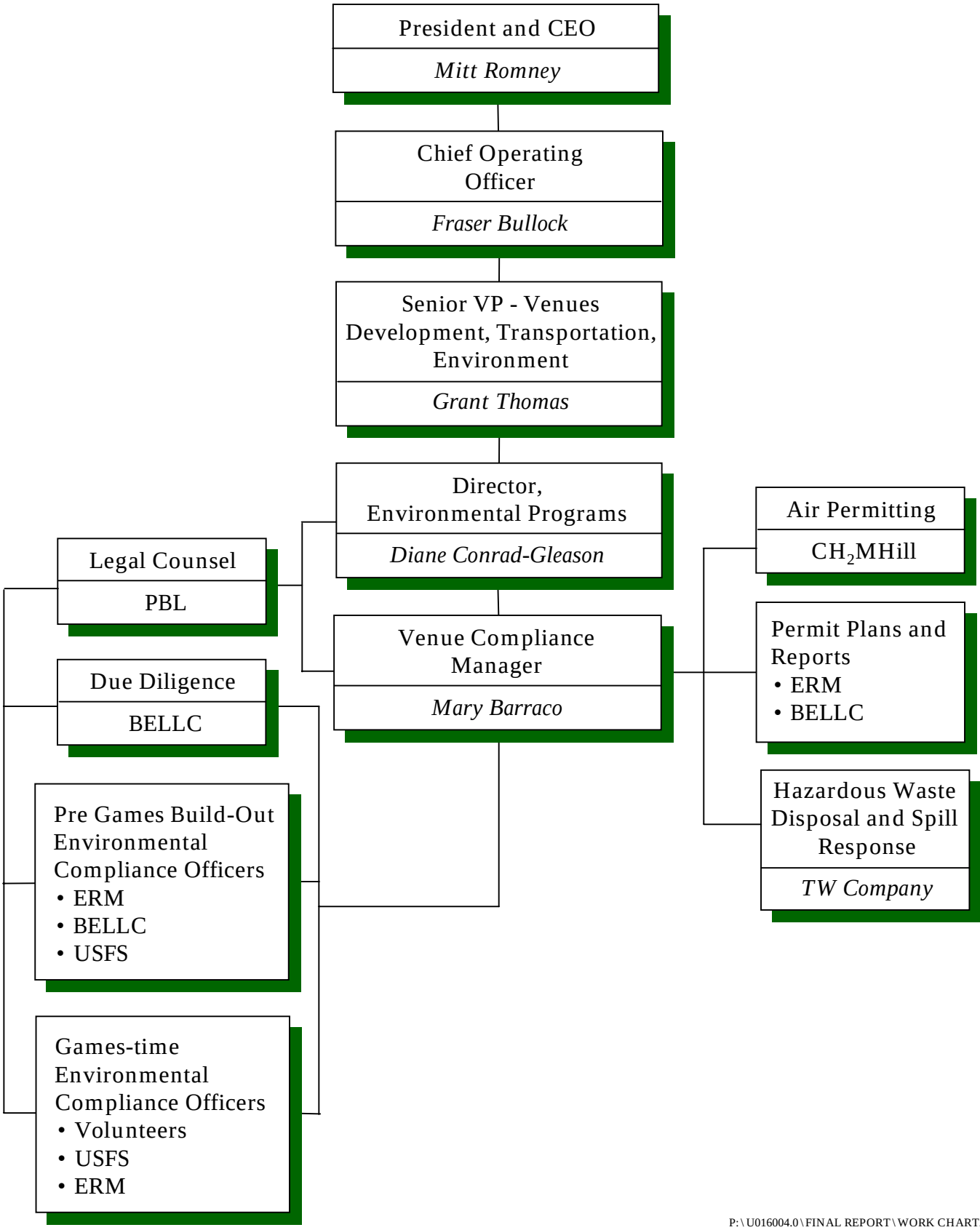
3. Set an example for effective coordination and cooperation between stakeholders on resolution of environmental issues

An important aspect of the compliance program was to have access to legal advice on both Federal and state environmental laws. SLOC's internal legal staff consisted of seven lawyers specializing in various practices who routinely coordinated with environmental staff. However, SLOC retained Parsons, Behle & Latimer (PB&L) to specifically assist SLOC's Environmental Department in the planning and implementation of its compliance program. PB&L provided the following services to SLOC:

- Helped develop SLOC's EMS
- Directed due diligence contracting activities
- Developed a ranking system and reporting procedure for the build-out compliance oversight inspections program
- Advised SLOC on an as-needed basis on various environmental legal issues

The VCM had no permanent SLOC staff working for her, hence she relied on contractor support, assistance from the U.S. Forest Service

Figure 1
Salt Lake Organizing Committee
Key Environmental Responsibilities



(USFS), and volunteers in order to accomplish the diverse tasks required to establish and maintain compliance. Two consulting firms, ERM and Brehm Environmental, LLC (BELLC), were retained to perform regularly scheduled inspections of venues and other Olympics-related facilities during the pre-Games build-out. A USFS employee filled this role at the Snowbasin ski area. Other environmental contractors that directly or indirectly supported SLOC's environmental program included: CH2MHill, the SE Group, URS Corporation, WiseEarth Environmental, Stantec Consulting, Inc., P-III Associates, NPM Environmental & Safety, Inc., RD&S Refrigeration Design & Service Inc., Nelson Laboratories, and the TW Company.

4.0 COMPLIANCE PROGRAM ELEMENTS

There were a number of risk factors associated with SLOC's environmental compliance program because of its high visibility, multiple venues and facilities, compressed time schedule, and the diverse interests of the many stakeholders. The VCM identified the following tasks and functions needed to reduce potential environmental compliance programmatic risk factors:

- Ensure adequate communication with other departments on requirements for environmental compliance and permitting
- Assign responsibility for environmental permitting and compliance for each venue and activity
- Provide hazard communication training for employees
- Establish adequate emergency response procedures to manage environmental incidents
- Establish controls on sediment erosion during Spring meltdown at mountain venues
- Prevent, control and adequately respond to chemical or petroleum spills.
- Fully anticipate the potential environmental issues that could be raised by regulatory officials, the public and NGOs before, during and after the Games
- Fully comply with permit commitments (such as reclamation) and permit close-outs or permit transfers after the Games
- Adequately document efforts to maintain environmental compliance and good management practices.

With the EMS as the foundation, the VCM built a broad compliance program designed to address these risk factors. The following subsections describe the key elements of the compliance program.

4.1 VENUE-SPECIFIC REGULATORY ASSESSMENTS

After identification of the environmental rules and regulations that could potentially apply to SLOC's activities relative to the 2002 Olympic Winter Games, venue specific assessments were performed with the assistance of contractors. Environmental Compliance Questionnaires were developed to assess venues and other facilities (e.g., practice facilities). The questionnaires are found in Appendix A. The questionnaire used

depended on the "level" of the venue or facility being assessed. The level designations were based on the nature of SLOC's ownership and involvement with construction, operation, and other activities at the venue or site. The venues and facilities, and their respective level designations were as follows:

I. ***Level One Facilities*** were designed, constructed and / or owned / operated by SLOC or SLOC direct contractors.

- Utah Olympic Park (UOP)
- Soldier Hollow Park (SHP)
- Utah Olympic Oval (UOV)

II. ***Level Two Facilities*** were leased by SLOC and operated by a third party pre- and post-Games. Moderate to significant modifications or construction of permanent facilities were made by SLOC or the venue owner at these locations in preparation for the Games. In some instances, SLOC took some responsibility for planning and oversight of the modifications or construction. Significant temporary facilities adaptations were made by SLOC. SLOC participated in the operation of the facility, or portions thereof, for test events and Games-time only.

- Deer Valley Resort (DVR)
- Park City Mountain Resort (PCMR)
- Snowbasin Ski Area (SBA)
- Peaks Ice Arena (PIA)
- Olympic Village (OVR)
- US 40 Bus Service Center
- Olympic Medals Plaza (OMP)
- Rice-Eccles Olympic Stadium (RES)
- Five major "Park-n-Rides"

III. ***Level Three Facilities*** were leased by SLOC and operated by a third party pre- and post-Games. No significant modification or construction of permanent facilities were completed in preparation for the Games. There were moderate to significant temporary facilities adaptations made by SLOC. SLOC participated in some aspects of the operations of all or a potion of the facility / venue for test events and Games-time only.

- Salt Lake Ice Center (SLIC)
- E-Center West Valley (ECW)

- Ice Sheet at Ogden (ISO)
- Main Media Center (MMC)
- Steiner Ice Arena - practice facility
- Acord Center - practice facility
- Murray City Ice Center - practice facility
- SLOC Warehouses
- SLOC Motor Pool

As originally conceived and described in the EMS manual, Level One facilities would receive the highest degree of scrutiny. Audits would be performed annually using the Level One questionnaire and a pre-build-out review and inspection was planned approximately two months prior to build-out completion.

Level Two and Three facilities shared an Environmental Compliance Questionnaire and audit /inspection frequency. Given the resources available at the time the EMS manual was written, it was anticipated that audits of Level Two and Three facilities would occur once, and that one pre-Games build-out inspection would be performed.

After securing the EPA grant funding, an enhanced Environmental Compliance Inspection program was developed for oversight during the construction out of the temporary facilities. The approach to categorizing facilities was modified. While SLOC's ownership was still an important factor in determining the degree of environmental oversight needed, inherent environmental risk associated with the construction activities at the facilities received greater emphasis. Comparing the EMS breakout for Level One facilities, the UOV was inspected once per week while the UOP and SHP were inspected twice per week. PCMR, DVR and SBA were inspected twice per week. The PIA, OVR, OMP, and RES were inspected weekly. The remaining Level Two and Level Three facilities (except the practice facilities) were inspected at least monthly.

4.2 PERMITS, PLANS AND REPORTS

The VCM or contract staff visited each venue or facility, and met with individuals knowledgeable about the sites' histories and operations. The appropriate questionnaire was completed at these meetings. Using a list of potential environmental permit and plan requirements, and the information gathered in the audits, a Venue Permit and Plan matrix was completed. The venue matrix described the permits, plans, and reports

required or recommended for each venue. Examples of permits, plans, and reports that were applicable to SLOC venues are as follows:

- ***Plans*** - Storm Water Pollution Prevention (SWP3); Dust Control; Spill Prevention, Control and Countermeasure (SPCC); Risk Management; Process Safety Management; Environmental Emergency Response
- ***Permits*** - Hazardous Material Registrations; Air Emissions Approval Orders (for boilers); Construction Storm Water Permits; Clean Water Act Section 404 (Dredge & Fill) Permits; Wildlife Permits; Utah Air Quality Small Source Registrations; Utah Air Quality Parking Lot Construction Approval Orders; Fuel Storage Permits; Underground Storage Tanks
- ***Reports*** - EPCRA Tier II

When feasible, generic permit application and plan templates were used or created. The VCM created a SWP3 template that was used by SLOC and its environmental contractors to write plans for multiple venues. ERM created an SPCC plan template that was used for all the competition venues. An abbreviated version of this template was adapted by BELLC for several non-competition venues. The VCM created a dust control plan template used by SLOC and ERM to write plans for several venues.

Storm water discharge permits for construction sites were held jointly between SLOC, the venue owner, and the construction contractor. The construction storm water discharge permits that cannot be closed by July 2002 will be turned over to the venue owner for completion and close-out. SLOC obtained an air permit for the UOO, which was subsequently transferred to the UOO's new owner, the Utah Athletic Foundation (UAF). SLOC held a CWA Section 404 Dredge and Fill permit for the UOP. This and other permits were transferred to the UAF for close-out.

4.3 *ENVIRONMENTAL MANAGEMENT STANDARDS AND PROCEDURES*

The Salt Lake Organizing Committee Environmental Policy and Procedures, March 2001, included as Appendix C, are the policies and procedures that were written to document and train employees, contractors and volunteers on the environmental requirements of the 2002 Olympic Winter Games. The Policy and Procedures document includes an emergency response poster, an environmental incident checklist and reporting form, and one-page procedures on the following topics:

- Managing hazardous materials and wastes
- Used oil, antifreeze and universal wastes
- Petroleum storage and fueling
- Non-hazardous waste management
- Site reclamation and closure
- Storm water
- Fugitive dust and air emissions
- Noise and light
- Vegetation
- Water resources
- Wildlife
- Cultural artifacts

4.4 ENVIRONMENTAL LIABILITY PROTECTION

There were four types of major contracts issued by SLOC:

1. Property leases
2. Major construction
3. Professional services
4. Purchase orders

Working with internal and external legal counsel, the VCM ensured that the appropriate environmental compliance and responsibility provisions were included in contract templates. Property leases included requirements for the lessor to disclose known or suspected environmental liabilities associated with the property, such as storage of hazardous materials on site, soil and ground water contamination, or regulatory agency enforcement actions. The lessor was required to disclose any permits, remediation, monitoring and environmental conditions that could affect SLOC during its course of business. The construction and professional services contracts included provisions for compliance with SLOC's Environmental Platform and Standards & Procedures, and a 20 minute employee training session on SLOC environmental requirements. Purchase orders required suppliers to comply with all environmental laws and regulations.

4.5 PROPERTY DUE DILIGENCE

Under the direction of PB&L, BELLC performed various levels of due diligence site assessments on selected properties to be leased by SLOC. One of three levels of environmental assessment were performed, based on the following factors:

1. The conditions of the contractual relationship between SLOC and the lessor

2. The nature of the use or modification (such as demolition or excavation) proposed by SLOC, with consideration given to the existing (pre-lease) use of the property

3. The lessor's planned, post-SLOC condition or use of the property

4. Consideration of potential risk (environmental and legal) because of existing environmental site conditions (such as a historic [albeit remediated] diesel release) and the planned SLOC activities (e.g., diesel fuel storage)

5. The availability of alternate properties for the proposed SLOC use

Level A Assessment – 3 Properties

The highest level of due diligence was performed on leased properties that could pose significant environmental risks to SLOC. The potential risks included: non-compliance conditions that could represent construction delays or operational interruptions; environmental exposures; public relations concerns; hazardous waste liabilities; and other conditions not aligned with SLOC's Environmental Platform. A Baseline Phase I Environmental Site Assessment was initiated in substantial compliance with ASTM E1527, which included standard tasks such as agency record reviews, review of previously completed assessment reports, historical map and aerial photo reviews, interviews with persons familiar with the historical use of the property, field inspections, photographic documentation of existing conditions, and the documentation of findings in a final, property-specific report.

Based on the results of the due diligence, SLOC could then consider modifications to the planned design, construction, or use of the leased property, if necessary. Examples of sites where the highest level of due diligence was performed included the Davis County Fairgrounds and the OMP. Prior to leasing these properties, the assessment results supported

site-specific terms in the lease agreements designed to encourage facility improvements (Davis County Fairgrounds) and to anticipate potential excavation delays (OMP) prior to SLOC accepting the lease. These measures reduced potential long-term risks to both SLOC and the lessor.

Level B Assessment – 7 Properties

A modified due diligence assessment, similar to an ASTM "transaction screen" was performed for those lease properties where the above-listed factors appeared to represent moderate risk. Selected agency records (such as reported petroleum releases) were typically obtained for these locations, followed by a focused (limited) site inspection and a brief technical memorandum to report the findings. No substantial interviews were performed or aerial photo/historical mapping documents assessed. The Level B assessments were primarily a "desk top" exercise. This technique was used for most of the lots leased in downtown Salt Lake City. It was also used for the Union Pacific Rail Road property that SLOC leased for a bus service center.

Examples of positive outcomes from the Level B assessments included the proactive recommendations to not disturb or remove interior walls, floors or electrical equipment in leased historic buildings due to the potential for the presence of asbestos, lead paint, PCBs or other potentially hazardous materials. In the case of one building, the existence of a poorly maintained storm water sump and drainage system resulted in the recommendation that SLOC not offer to upgrade that system, unless it was willing to assume the cost and liability of handling the sludges and oils residing in that system.

Level C Assessment – more than 30 Properties

The environmental assessment for leased properties such as the UTA parking lots and parking lots for employees focused on a visual inspection of the property with observations noted in the file, or transmitted verbally during project management meetings. While these assessments did not typically result in significant impacts to the lease planning process, they did provide an additional cross-check between the various SLOC teams, and identified the need for compliance action items such as the generation of spill prevention planning documentation and permitting.

Several compliance program-level benefits resulted from implementation of the due diligence effort. First, it generated documentation useful in the event that an "innocent landowner" defense should ever be necessary on behalf of SLOC. Second, the use of a tiered approach, which custom-fitted each level of effort to site conditions, saved an estimated $30,000 over the arbitrary execution of comprehensive ASTM assessments for

every property. Third, the timely exchange of information between SLOC environmental, and planning and construction build-out staff likely avoided the discovery of conditions or non-compliance issues that could have resulted in additional costs, liabilities, and/or delays to Games-times construction build-out. In no case did the due diligence activities impede the progress of the planning and construction build-out missions.

4.6 STAKEHOLDER COORDINATION

The information below only recognizes the coordination between stakeholders and the Salt Lake Organizing Committee with regards to environmental compliance issues. Please note that many of the stakeholders played significant roles in achieving the success of non-compliance related environmental programs developed and implemented for the Games.

U.S. Environmental Protection Agency (EPA)

In August 2001, EPA Region VIII provided a grant of $2,494,500 to SLOC. The grant is described as the "Congressionally appropriated funds for environmental program and operations of the 2002 Winter Olympic Games including activities under Solid Waste Disposal Act, Clean Air Act, and Clean Water Act." The budget for environmental compliance activities was $350,000, which included the VCM's salary, and contract costs associated with construction monitoring activities, and writing an after-action report on compliance. SLOC provided EPA with quarterly progress reports, and this final report.

In late 1999, the EPA in cooperation with SLOC, agreed to conduct a voluntary Chemical Safety Audit of the ammonia refrigeration system at the UOP. Because of the overlap of regulatory requirements, and in an effort to minimize the number of audits to be conducted at the facility, EPA invited Utah OSHA to participate in the process as well. Due to the Health Response Team's (HRT) experience and expertise with ammonia refrigeration systems and OSHA's Process Safety Management (PSM) standard, Utah OSHA subsequently contacted the HRT to request technical assistance with the audit. The initial audit was conducted on January 10-12, 2000 and included representatives from the UOP, SLOC, EPA, OSHA, and various other state and federal government agencies. Subsequent follow-on visits were made in 2000 and 2001. This audit and the follow-up visits were not compliance inspections, rather the purpose was to assist the UOP in identifying any deficient areas in their PSM program and provide guidance in correcting those deficiencies, as

appropriate. All of the audit findings were successfully resolved as of April 30, 2002.

U.S. Army Corps of Engineers (USCOE)

Both the UOP (SLOC) and SHP (Utah Department of Natural Resources, Division of Parks and Recreation (UDNR)) were issued CWA Section 404 (dredge and fill) permits under Nationwide Permit Number 26. SLOC and the COE successfully worked through various issues, such as the wetlands mitigation at SHP and a purported wetlands draining across from the Route 224 Park-n-Ride.

In constructing the cross country ski and biathlon venue at SHP, less than 0.5 acres of wetlands were filled. Approximately one acre of wetlands was created as compensatory mitigation. SLOC provided technical assistance and funding and worked with the UDNR to successfully complete the majority of the planned mitigation measures. However, problems arose in providing water for the successful creation of the riparian wetland mitigation area. As a condition of the COE permit, monitoring reports were submitted annually. The reports documented the failure of the wet meadow due to lack of water. The COE, SLOC, and UDPR worked together to establish a permanent water source for the wetlands. An independent contractor is monitoring the success of the project.

U.S. Forest Service (USFS)

Both men's and women's Downhill race courses were located on USFS land at SBA. The USFS provided an employee who served as a Venue Compliance Officer (VCO) during the build-out and at Games-time at SBA. Three additional USFS employees were provided to serve as VCOs during the Olympic and Paralympic Games.

The USFS initiated the National Environmental Policy Act (NEPA) process for SLOC proposed activities on lands administered by the USFS. The VCM drafted the Proposed Action for contingency snowmaking at Strawberry Reservoir. Approximately 35,000 cubic meters of manmade snow could have been transported, if needed, to the Soldier Hollow cross country and biathlon venue if natural snow had been insufficient. SLOC and the USFS also worked with the Central Utah Water Conservancy District to arrange for the availability of 30-acre feet of water for snowmaking activities. Two permits were issued by the USFS for SLOC activities at Strawberry Reservoir. A Temporary Special Use permit was

issued for the snowmaking activities and a Road Use permit was issued for authorization to plow snow from an access road. The activities were completed and the permits expired in Spring, 2002.

The USFS also provided valuable guidance on reclamation at the UOP jump site, Olympic Rings Icon site and SBA. The USFS produced a document "Ski Area BMPs (Best Management Practices) Guidelines for Planning, Erosion Control and Reclamation" for Forest Service districts with ski resorts or construction projects, as a result of the USFS' intense involvement in Olympic related construction activities at SBA.

Utah Department of Environmental Quality (UDEQ)

The VCM met individually with UDEQ staff to discuss permitting and compliance issues for air, water, waste and environmental response and remediation associated with existing facilities and facilities to be constructed and operated in anticipation of the 2002 Olympic Winter Games. It was clear that UDEQ had made departmental participation and regulatory oversight for the Games a priority. The UDEQ staff were very accommodating and made themselves available to review information in a timely fashion, often re-arranging their schedules to help with critical issues.

The VCM and senior UDEQ staff held monthly meetings prior to the Games to disseminate information between SLOC and UDEQ. The topics discussed included: solid and hazardous waste management; dust control during construction; air emissions from generators, fireworks, the torch and the cauldron; storm water runoff controls at venues and Park-n-Ride lots; and spills and spill clean-up. The meetings increased in frequency several months before the Games. SLOC was asked to provide an informational progress report to the UDEQ Executive staff. Again, as with the EPHA coordination and communication, close working relationships provided all parties with essential information and a means to conduct business and inspections in a non-confrontational environment.

Utah Department of Natural Resources (UDNR)

The VCM met individually with UDNR staff to discuss permitting and compliance issues associated with stream alteration and wetland mitigation. SLOC applied for, or acquired through transfer, stream alteration permits at the UOP and SBA. In addition, SLOC provided technical assistance and oversight on the SHP COE permit held by UDNR Division of Parks and Recreation. The VCM coordinated with the UDNR on matters such as mitigation measures during road construction at SHP

to protect a Redtail Hawk fledgling site, reporting venue wildlife mortalities, and confirmation of the permit status for the eagle used in the Opening Ceremonies.

Fire Marshals Workgroup

Fire Marshals from counties and municipalities in which Olympic Venues were located formed a committee that met regularly to formulate policies and procedures to be applied consistently to Olympic venues throughout the various jurisdictions. The VCM shared responsibility with other Olympic managers to ensure that the fire marshals workgroup's requirements were being met in the construction program, and in the operational plans for the venues. Hazardous material storage permitting is under the jurisdiction of the Fire Marshals per state and local laws and regulations, as well as certain spill prevention and control measures required by the Uniform Fire Code (UFC). The VCM, ERM and BELLC worked closely with the Fire Marshals to prepare hazardous materials registrations for all of the Olympic competition venues due to exceedence of threshold amounts of propane and diesel fuel stored and used on site. Hazardous Materials Registrations were also required for the Soldier Hollow Park-n-Ride and U.S. 40 Bus Service Center due to storage and use of diesel fuel.

Environmental and Public Health Alliance (EPHA)

The Environmental and Public Health Alliance (EPHA) was created to facilitate coordination between the local health and environmental regulatory agencies and to efficiently address issues prior to and during the Games. EPHA was made up of representatives from SLOC's Environmental, Medical and Food Services Functions, Utah DEQ, Utah Department of Health, Utah Department of Agriculture, local (city and county) environmental health agencies, and the Utah Department of Comprehensive Emergency Management. Prior to the Games, EPHA assisted Utah communities in creating and modifying Mass Gathering Rules. Local health departments issued the Mass Gathering permits, which were required for any indoor or outdoor public event longer than two hours that was expected to attract more than 500 people. This encompassed all competition and non-competition events associated with the 2002 Olympic Winter Games and Paralympic Games. The permits required review of waste collection and removal, sanitation facilities, drinking water, first aid, food and noise issues at each event location. EPHA inspectors also checked for proper chemical storage and spills.

SLOC's Director of City Services was responsible for negotiating and securing Mass Gathering permits from each local health agency. Representatives from SLOC Environment, Medical, and Food Services were then responsible for maintaining compliance with the permit conditions and negotiating minor changes in the field during venue construction and operation.

Local health inspectors used special checklist forms and guidance created by EPHA for venue inspections, which started during test events and continued through construction and Games-time operation. As Games-time approached, field coordination between SLOC and EPHA increased with cellular telephone numbers and emergency contact numbers exchanged between EPHA inspectors and SLOC Environmental contractors and volunteers. While the inspectors always retained their regulatory enforcement authority, they worked cooperatively with SLOC to identify and address potential environmental issues before they could become violations. The VCM, contractors, and volunteers were committed to "Zero Violations," and worked expeditiously to address issues. From the perspective of the VCM, this valuable coordination contributed greatly to the success of the Games-time compliance program.

In order to coordinate public health and environmental information for the 2002 Olympic Winter Games and Paralympic Games, EPHA facilitated a conference call with all parties, including the VCM, beginning one week prior to the Games. The conference calls were daily during the Olympic Games and every other day during the Paralympics. Discussions focused on "Hot Topics" for each day such as food and drinking water safety, cold weather effects on portable toilets, and air quality inversions. EPHA created a Final Report, a copy of which can be requested by calling UDEQ at 1-800-458-0145.

The Environmental Advisory Committee (EAC)

In 1994, an Environmental Advisory Committee for the Salt Lake Olympic Bid Committee was formed. This committee represented diverse interests from throughout the environmental community, including citizen environmentalists, the USFS, environmental engineers, recycling specialists, and city and state environmental representatives. Following the award of the 2002 Olympic Winter Games, the EAC became the advisors to the newly-formed SLOC. While the EAC had no direct programmatic responsibility for environmental compliance, it provided a forum for interagency cooperation that was often quite helpful to the compliance program.

SLOC Venue Team

SLOC's venue team had a vested interest in maintaining environmental compliance throughout the venues construction program. Non-compliance could impact the progress of the construction, subjecting those involved to professional and personal legal liability, and negatively affect the world's perception of the Salt Lake 2002 Olympic Winter Games.

Area (construction) Managers and Site (construction) Managers sought out the Environmental Department's input on numerous venue issues. The VCOs for the UOP, RES, OMP, OVR, SBA, and various Park-n-Rides were invited to participate in the weekly construction planning meetings and the VCM attended planning meetings for several other venues. This interaction was effective in that it allowed the Site Managers and Lead Architects to change the design of facilities prior to construction to minimize environmental impact or permitting concerns. An example of this was the re-design of a sponsor hospitality tent at UOP to avoid potentially requiring a stream alteration permit.

Venue Owners

The venue owners' interests in maintaining environmental compliance was generally aligned with SLOC's. Most environmental statutes attach legal liability for environmental compliance to facility owners and operators. The VCM entered into most new permits associated with the Games jointly with venue owners. In some cases, the VCM and environmental contractors provided technical assistance and oversight regarding permits held or to be obtained by the venue owners. In all cases, the VCM established the compliance framework under which each venue was to operate. In some cases, while the VCM and the venue owners clearly envisioned the same end result, i.e., environmental compliance, the means to achieving this goal could have been contentious. For example, ERM identified the need for construction of additional erosion and storm water control structures at Deer Valley Resort. It was important for SLOC's venue team and SLOC's Environmental Department to recognize that this type of construction could impact the Resort's pre-Games skier access. The Resort's own consultant (the SE Group), SLOC's consultant (ERM), and the Utah Division of Water Quality collaborated to produce a design agreeable to everyone.

Corporate Sponsors, Partners, and Suppliers

The Coca-Cola Company and VCM worked closely to ensure compliance with solid and hazardous waste and air quality regulations during the torch relay. Each torch contained a small compressed gas fuel canister. SLOC purchased an aerosol can puncturing and collection device that was carried in one of the torch relay vehicles. Coca-Cola distributors throughout the country provided support by recycling the aluminum canisters.

The Eastman Kodak Company, SLOC, UDEQ, SBA environmental consultants and two public utilities worked together to develop methods to manage the effluent from film processing at two venues in Salt Lake City and two remote mountain venues with limited access to sanitary sewer facilities. Kodak installed silver recovery units at all locations rendering the effluent non-hazardous after processing. Kodak could then transport the silver as a recoverable / recyclable product and dispose of the non-hazardous effluent to a wastewater treatment facility.

Aggreko supplied the portable generators for the Games. The diesel fuel for the generators was supplied byTexaco, using Kellerstrass Oil Company, Pierce Oil Company, and Jardine Petroleum. In an effort to reduce the risk of spills during generator fueling, the VCM arranged for Aggreko to train the fuel suppliers on the details of the Aggreko generators. In addition, the Aggreko Director of Environment, Health & Safety (EHS) traveled to Utah to assist the VCM in gathering the information necessary to calculate the potential emissions from their diesel fuel-powered generators, as well as to assist in developing spill prevention measures.

4.7 ENVIRONMENTAL COMPLIANCE EDUCATION AND TRAINING PROGRAMS

While some components of SLOC's environmental training program were driven by regulations, i.e., UOP employee training on ammonia hazards, most were voluntary and proactive. Table 4-1 presents a summary of the environmental training program developed by the VCM. In addition, the VCM provided SLOC's Risk Management Function with an employee safety orientation training program. This program included a Hazard Communication component that was a modified version of the UOP's program.

Table 4-1 Environmental Training Program Summary

Training Module	Functional Area or Role	Training Provider
Environmental Procurement Policy	SLOC procurement	Venues Compliance Manager
Standards and Procedures	SLOC employees: Area Managers, Site Managers, Warehouse employees, Logistics, and the Waste, Recycling, Cleaning and Snow Removal (WRCS) function	Venues Compliance Manager
	Construction contractors – Construction Manager and Superintendent	Venues Compliance Manager
	Construction contractors – crews and subcontractors	Construction Manager and Superintendent
	Environmental support contractors	Venues Compliance Manager
Spill Response	Contract fuel delivery personnel; Aggreko technicians; Construction Managers and Superintendents	Venues Compliance Manager
Aggreko Generators	Contract fuel delivery personnel	Aggreko
Ammonia Hazards	All SLOC employees working with ammonia refrigeration systems	Venues Compliance Manager, UOP Safety Coordinator
Environmental Officer Job-Specific Training	Environmental volunteers	Venues Compliance Manager, BELLC and ERM
Reclamation Requirements	Rings Icon contractors and subcontractors, security personnel	Venues Compliance Manager and ERM

4.8 AIR

The three sources of potential air emissions from SLOC activities are discussed in the following paragraphs.

Portable Generators

Staging a televised sporting event the size of the Olympics required the use of a large number of portable generators. In previous Olympic Games staged in the United States (i.e., Atlanta), portable generators as non-road engines were determined to be excluded from regulation under the Clean Air Act's stationary source program. However, the Utah Division of Air Quality did not agree with this approach, and viewed these units as potentially subject to new source review (NSR) requirements. Hence, the first challenge that the VCM faced was calculating the potential emissions from the generators at each venue.

The initial approach used was to request information from the contracted supplier (Aggreko) on the number, size, types, emission factors and hours of operation for the generators at each venue. This was followed by site visits to confirm that this information was accurate. At most of the venues the information was not accurate because of constantly changing temporary facility designs and the resultant power requirement changes. Additionally, hours of operation did not reflect the needs expressed by on-site personnel. Without accurate power designs, the potential emissions calculations would be inaccurate. So, the VCM, VCO, and Aggreko's Director of EHS met with the construction Site Managers and the on-site Aggreko technicians to discuss power needs in detail. The goal was to find ways to limit emissions at each venue to qualify for Utah's small source or *de minimis* exemption. When the potential emissions were initially calculated, 13 out of 18 venues exceeded the five ton per year limit for NO_x. Also, a late addition of four generator units at the Medals Plaza increased the potential emissions from less than two tons per year to 7.6 tons per year. The venues made adjustments in generator operating plans, such as using the generators for backup rather than primary power, and reducing the hours of operation. These actions reduced the potential emissions and allowed SLOC to meet the *de minimis* threshold at every venue.

Olympic Cauldron

The cauldron emissions were calculated using AP-42 emission factors for boilers. The cauldron was fueled by propane and natural gas, and was operated at 3 MM btu / hour and 7 MM btu / hr. The cauldron emissions also met the *de minimis* thresholds.

Fireworks

SLOC was under no regulatory obligation to consider the emissions (all of which were considered fugitive) from fireworks displays throughout

the Salt Lake Valley and Park City. However, SLOC chose to do so based on its environmental platform and stated commitment to air quality in Utah. The lack of both established emissions factors (i.e., no AP-42 factors) and definitive information on net explosive weight (NEW) and material constituents made calculating potential emissions a challenging task. CH2M Hill, in preparing these estimates, assumed that the fireworks consisted of black powder and small amounts of metals as colorants. Emission factors were derived from military munitions. The emission calculations and assumptions were submitted to the UDEQ Division of Air Quality for review and informational purposes.

4.9 WATER

Storm Water Permits and Plans

Storm water discharge permits for construction sites greater than five acres were required for several venues: UOO, UOP, PCMR, DVR, SHP, SBA and the OMP. The permits at the SLOC-owned UOO, UOP, and SHP were in place as a result of the initial construction of the permanent facilities. The accompanying SWP3s, however, did not specify the temporary facilities earth-disturbing activities, only the activities associated with construction of permanent facilities. The existing plans for these venues stated generally that temporary construction would begin in 2001, and that the plans and permits would be modified if needed to reflect temporary construction activities. UPDES storm water discharge permits and associated SWP3s for the UOO, UOP, and SHP were not modified during the temporary facilities' build-out period because the earthwork was essentially the same as during the initial construction.

The PCMR owners, SLOC, and Jacobsen Construction obtained an UPDES construction storm water discharge permit specifically for SLOC's temporary construction activities. Both the SWP3 and the permit were modified once during the build-out as a result of major design changes, which resulted in significant changes to storm water control structures at the site.

The SBA owners had obtained an UPDES construction storm water discharge permit to accommodate SLOC-related construction, as well as significant site development unrelated to SLOC. This permit was held by SBA's owners alone.

At the beginning of the compliance oversight program, DVR had no SWP3 or UPDES construction storm water discharge permit for the

temporary facilities' construction, because plans for the site called for disturbance of less than five acres. As plans changed during construction, it became apparent that there was the potential to disturb more than five acres at DVR due to SLOC activities. Hence, it was deemed appropriate to obtain a permit and create the necessary SWP3. ERM prepared the permit application and developed the SWP3. The permit was held jointly by DVR, SLOC and Jacobsen Construction.

Potentially significant springtime water pollution from eroded soil at the mountain venues was a high priority risk identified by the VCM and environmental consultants. Significantly eroded hillside construction sites could lead to degradation of stream water quality, potential non-compliance with storm water permit conditions, and violations of the Utah Water Quality Standards. The VCM, ERM and BELLC initiated a program to identify areas of particular concern for erosion and to design BMPs for installation prior to the Games in the Fall of 2001. Where it was not possible to complete BMPs, supplies were purchased and contingency plans were made to deal with expected springtime snowmelt and subsequent erosion.

SLOC's compliance program provided technical assistance and oversight through BELLC on some UDOT activities directly associated with the Games. UDOT operated five "Park-n-Rides" for the Olympic and Paralympic Games at the following locations:

- Mountain Green
- Cornia Drive
- U.S. Highway 40
- State Route 224
- State Route 189 outside Heber City

The Mountain Green site was originally less than five acres, but subsequent plan changes expanded the lot to more than five acres. Hence, a storm water discharge permit was required. An application was submitted by UDOT to UDEQ. The Cornia Drive lot drained to an adjacent gravel pit and UDOT did not anticipate any off-site discharge of storm water. However, after discussions with UDEQ, UDOT proactively submitted a permit application for this site. The remaining parking lots were planned from the outset to be larger than five acres. Hence, construction storm water discharge permits were in place prior to construction. SLOC assisted UDOT in applying for Mountain Green and Cornia Drive lots and BELLC assisted with implementing the permit requirements at all the lots. SLOC continued to provide oversight after

the Games. The permits will remain in effect until 70% of the revegetation has been achieved.

Other Initiatives to Protect Water Quality

Snow and De-Icer Environmental Policy

Representatives from SLOC and UDOT reviewed more than a half dozen de-icing products and determined that with proper use, all were environmentally acceptable. Each venue was allowed to choose which product would best suit their needs, and routine use and storage guidelines were established. These guidelines were as follows:

- Chemical de-icers were not to be used within 50 feet of streams or gullies unless approved by the Environmental Function
- Chemical de-icers were to be stored on impervious surfaces (asphalt, concrete, liner) located away from streams and storm drains
- All de-icer piles were to be covered
- De-icer piles were to be stored within jersey barriers, or similar containment

The VCM worked with SLOC's Waste, Recycling, Cleaning and Snow Removal (WRCS) Department and Venues Development to formulate environmentally appropriate snow removal and storage procedures. Some of the BMPs that were detailed in correspondence to the Wasatch Front and Back venues included:

- Snow was to be free of trash, debris, and hydrocarbon spills prior to plowing
- Snow was to be removed by plowing prior to application of chemical de-icer
- Snow was to be stored on asphalt, concrete, or other artificially surfaced areas, or hauled off site for disposal
- Snow piles should not block storm drains
- Storm drains receiving snow pile runoff must have inlet protection

All of these guidelines were included in the Games-time inspection protocol carried out by the VCOs.

Water Quality Sampling

Utah Division of Water Quality Monitoring Program

The Utah Division of Water Quality, in cooperation with the VCM, conducted a water quality sampling program to monitor potential impacts to receiving streams near Olympic venues in the Wasatch Mountains beginning in August 2001 and continuing through June 2002.

Many of the water monitoring sites were previously established Total Maximum Daily Load (TMDL) Program locations, with associated annual data. Nine new sites were added during the monitoring program in an attempt to isolate and sample waters draining from areas of SLOC activity at UOP, SHP and SBA.

- Four new sites were added below the state Route 224 Park-n-Ride at UOP; two were at culvert entrances on the west side of Route 224, the other two were corresponding culvert outlets downstream on the east side of Route 224.
- Two new sampling sites were added in Stadium Springs downstream of SHP.
- Three new sites were added at SBA; two were upstream of a wetland meadow (one along Wheeler Creek and the other along Bear Hollow Creek). The last site was in a stream upgradient of the SBA sewage lagoons.

No new water quality sampling sites were necessary to monitor runoff from DVR and PCMR.

The VCM arranged access for UDEQ staff to locations within the boundaries of venues during times when public access was tightly controlled. The VCM also provided input on monitoring locations, parameters, and the duration for monitoring activities.

Monitoring along two major roads indicated occasional high TDS values, presumed to be associated with wintertime road salting; it is not clear whether these values represented normal wintertime values, or if Olympic activity caused an increase in road salting by state and local transportation authorities. During the first week of the Games the water monitoring program identified increased coliform concentrations in the creek below the Soldier Hollow venue. The increased coliform concentrations were attributed to the presence of horses stabled near the creek. SLOC was notified of the results, and immediately took action to improve animal waste management practices which resulted in the coliform count returning to normal levels. Monitoring results as of the end of May 2002 indicated that activities associated with the Olympics did not contribute to long-term impairment of streams at or below any of the venues. A report will be compiled by UDEQ upon completion of the monitoring program.

SLOC's Endotoxin Monitoring Program

Snowmax Snow Inducer was the water additive used for snowmaking at all the Olympic ski venues. SLOC's VCM gathered information on Snowmax to gain a better understanding of the product and to identify any potential impacts to human health or the environment. Snowmax is a protein derived from the Pseudomonas syringae (P-syringae) bacteria. The bacteria is grown, sterilized, filtered, freeze dried and then pellatized for shipment. This process ensures that no live bacteria are present in the finished product; only the protein "shell" of the bacteria is used. The protein shell contains endotoxins, found in the cell wall. Endotoxins are a naturally occurring biological molecule found in soils, water, plants and in the human body. Despite the fact that Snowmax has been used for snowmaking at many of the ski areas in the Wasatch Mountains for the past ten years, regulators and the general public questioned the safety of using Snowmax for Olympic snowmaking. SLOC presented information on Snomax at a September 2001 meeting of the Jordanelle Technical Advisory Committee (JTAC). Although the majority of the attendees agreed that the product posed no threat to human health or the environment, it was decided that the VCM and the DEQ would develop and implement an endotoxin monitoring program for the SHP venue area. Baseline samples were collected in September 2001, followed by monthly sampling at the three designated SHP locations from January to June 2002. The results as of May 2002 showed no definable trends with respect to anticipated increases of endotoxin in snowmelt runoff from the venue.

4.10 HAZARDOUS MATERIALS

Refrigeration systems

There were six Olympic venues (UOP, UOO, ECW, ISO, SLIC, and PIA) with artificial ice-making systems. Five of these venues used varying quantities of ammonia as the refrigerant. The presence of ammonia at or above the threshold quantity triggers certain planning and reporting requirements under a number of environmental and safety regulations. The refrigeration systems at two venues, the UOP and the UOO, contain ammonia above or very close to the threshold quantity. SLOC's compliance strategies relative to the applicable regulations are described in the following sections. The refrigeration systems at the ECW, ISO, and SLIC used significantly smaller quantities of ammonia and as such were not subject to any special reporting or work practices. The PIA used an HCFC refrigerant mixture, subjecting certain activities (e.g., servicing) to regulation under Title VI of the Clean Air Act (Stratospheric Ozone Protection Program).

The UOP relies on a state of the art ammonia refrigeration system to maintain ice on the bobsleigh / luge / skeleton track. The system has a maximum refrigerant charge exceeding 10,000 pounds of anhydrous ammonia, and as such, the UOP is subject to EPA regulation under 40 CFR 68, Accidental Release Prevention Program and OSHA's Chemical Process Safety Standard at 29 CFR 1910.119.

The EPA, OSHA, and Utah Occupational Safety and Health (UOSH) conducted a voluntary Chemical Safety Audit of the UOP's Process Safety Management (PSM) program in January, 2000 when the facility was owned and operated by the Utah Athletic Foundation. The overall finding of this audit was that the written PSM program in existence at the facility prior to SLOC's takeover, was inadequate.

Upon SLOC acquiring the facility and pursuant to the Risk Management Plan (RMP) regulations (40 CFR 68) and the PSM standard (29 CFR 1910.119), SLOC developed a comprehensive written PSM program to protect UOP employees and the surrounding communities from exposure to ammonia. The facility completes a pre-startup safety review using checklists prior to the beginning of each season. SLOC's implementation of the revised PSM program included:

- Employee education
- Mechanical integrity programs
- Pre-startup safety reviews and management of changes to the refrigeration system
- Specific requirements for safe work practices (such as safe approaches to welding and similar hot work)
- Safety requirements for contractors who may be hired to work on the systems
- Evaluation of contractors' qualifications

The process hazards analysis (PHA) is one of the most important elements of the PSM program. A PHA is an organized and systematic effort to identify and analyze the significance of potential hazards associated with the processing or handling of highly hazardous chemicals, including anhydrous ammonia. The EPA / OSHA / UOSH audit found serious deficiencies in the existing PHA program in early 2000. Working with the UOP to strengthen its PHA program became one of the major tasks undertaken by the VCM. The facility used the industry standard What-If? / Checklist Analysis developed through the

International Institute for Ammonia Refrigeration (IIAR) to conduct a PHA of the track ammonia refrigeration system in September 2000.

EPA also recommended that SLOC use a non-checklist PHA to identify credible accident scenarios that were specific to the UOP. The UOP had never experienced a release of ammonia involving consequences that affected residents or the environment, nor had the facility experienced a near-miss situation that should have been investigated. However, as part of the RMP requirements and to address EPA's recommendation, the VCM and UOP undertook a review of the potential off-site consequences of the accidental release of the largest vessel in the systems. Although such a release was highly unlikely, the regulation required this worst case scenario review.

The UOP's written PSM program incorporated its comprehensive Emergency Response Plan (ERP) and placed special emphasis on handling accidental releases of hazardous chemicals and coordination of emergency response with local fire departments and other emergency response organizations. The response plan detailed the emergency response structure and included personnel responsibilities and procedures within that structure. In addition, the plan included procedures for notification of local agencies in the event of an incident, facility evacuation, and decontamination. Finally, the plan discussed emergency preparedness and planning, including facility plans for conducting emergency response team training and drills.

The UOP and VCM revised the ERP to include coordination agreements with off-site responders. SLOC also undertook a public information campaign to educate the local community on ammonia hazards, and donated $10,000 (one third of the cost) to implement an Emergency Preparedness Network for Summit County.

Utah Olympic Oval

The ammonia refrigeration system at the UOO contains slightly less than the 10,000 pound threshold that triggers the various PSM/RMP requirements described above. However, from a risk management perspective it was deemed important by the VCM to include many of the same PSM/RMP elements in the safety program for the UOO. Hence, the UOO's chemical safety program was modeled after the PSM/RMP programs at the UOP. Although not specifically required by regulation, the SLOC's Environmental Department took a proactive approach and prepared an ammonia hazard-focussed ERP for this venue.

Soldier Hollow Range Management Plan

The Soldier Hollow venue was designed and built specifically for the 2002 Olympic Winter and Paralympic Games. Hence, environmental considerations were integral to its design and construction. Some of the key design features included storm water run-on and run-off controls, and three levels of collection and containment to consolidate large and small lead particulate splatter at the shooting range:

- bullet catchers with covered collection trays
- a concrete slab extending two meters in front of the targets
- a level dirt surface extending 16 meters in front of the concrete slab

The goal of these design features was to minimize the need for lead remediation and the potential for adverse impacts on environmental receptors. The VCM also developed lead management and environmental monitoring plans to further this goal.

The lead management plan was developed with input from the Vermont National Guard, the EPA, and the National Rifle Association's Range Management Manual. The plan calls for periodic vacuuming of the target area, with the frequency being determined by the amount of use of the facility. Worker safety, including personal protective equipment and medical monitoring, and waste management were included in the plan.

The environmental monitoring plan calls for annual soil and water sampling by a third party contractor. The analytical guideline level chosen for soil is conservative, to ensure protection of the environment. The plan describes who will be involved in the decision-making process, and lists various options if the analytical guideline levels are exceeded.

Hazardous Materials Registrations

County ordinances required hazardous material registrations be completed for all SLOC venues, primarily due to the presence of large quantities of diesel and propane fuels; explosives and ammonia refrigerants were also an issue at some of the venues. Compliance with hazardous material ordinances was overseen by the state and county Fire Marshals. In order to provide consistency and facilitate the production of such a large number of applications, the Fire Marshals' working group agreed to use one form for all the various jurisdictions. ERM and the VCM met with the Fire Marshals' representative and proposed an approach to provide the necessary information in a very short time. ERM developed a questionnaire that was sent to the venue Site Managers; ERM followed-up with site visits and phone calls to address the

remaining information gaps. The Provo Fire Marshal reported that the registrations were very helpful in his chemical emergency planning process.

Spill Cleanup

The SLOC Policies and Procedures contained a spill response procedure and reporting form for use by venue/facility personnel. SLOC's Environmental Department provided one or more spill kits to each venue. It was anticipated that most potential spills could be cleaned up by site personnel. In the event a spill was too large, or otherwise beyond that which could be handled by site personnel, an emergency response contractor was available. TW Company was chosen by the VCM to respond to spills at SLOC venues and to dispose of used absorbents and potential hazardous wastes following the Games.

Kodak Effluent

Kodak operated one-hour film processing booths at the MMC, the OVR, SHP, and SBA. Several months prior to the Games, Kodak provided its proposed effluent management procedures to the VCM and the DEQ. Kodak's process uses a filter cartridge to remove almost all of the silver from the liquid waste. After a predetermined volume of effluent has passed through the filter, the filter is removed and sent for precious metal recovery. The remaining liquid waste can legally be discharged to the sanitary sewer system without any additional treatment. In the case of the venues located in Salt Lake City, the process information and a sampling and analysis plan were submitted to the SLC treatment works prior to the Games. The effluent at the remote venues was emptied into the respective on-site sanitary sewer systems. The Kodak operators maintained a usage log, which was inspected by the VCOs. Kodak also obtained from DEQ an EPA hazardous waste generator identification number for this project.

Solid Waste Management

SLOC's WRCS department was responsible for contracting with several waste transporters and a recycling/composting facility to achieve SLOC's stated goal of zero waste. This program was funded through the aforementioned EPA grant that funded the compliance program. Approximately 95% of all solid waste generated at Olympic venues was recycled or composted.

5.0 PRE-GAMES BUILD-OUT OVERSIGHT

5.1 ORGANIZATION

As described earlier in this report, the inspection program was organized according to the environmental risk posed by the various facilities and sites. The majority of the build-out environmental compliance inspections were divided between two environmental consultants, ERM and BELLC, with the USFS providing an employee to oversee the build out at SBA. The remaining competition venues (UOO, PIA, ISO, SLIC, ECWV, DVR, UOP, PCMR, SHP) were inspected by ERM; BELLC oversaw the non-competition venues (AV, RES, MMC, MP), the UDOT "Park-n-Rides," and the UDOT bus servicing center in Summit County. A copy of SLOC's Request For Bids for environmental compliance oversight during the Olympic build out is included in Appendix D.

5.2 TRAINING

The environmental consultants were selected based on their experience performing multi-media environmental audits and assessments. The VCM provided contractors and the USFS with training on SLOC's environmental policy and procedures and SLOC health and safety policy at the project kick-off meetings.

5.3 COMMUNICATION AND COORDINATION

In order to ensure program success, it was important that the venue construction managers understood that the purpose of the build-out Environmental Compliance Inspection program was to help them maintain environmental compliance. ERM and BELLC were essentially resources being provided to them by the Environmental Department. Hence, at the commencement of the program, Diane Conrad Gleason and Mary Barraco sent a memorandum to the SLOC construction Area Managers, Site Managers, UDOT, and UTA detailing the program and explaining the role of the consultants. A description of the inspection protocols and a copy of the inspection form to be used by the inspectors was included. The inspection form used for this phase of the compliance program is included in Appendix D. SLOC's outside environmental legal counsel, PB&L, prepared the inspection protocol, which described confidentiality, instructions to the inspectors on reporting, risk designation, and document retention. ERM, the VCM and BELLC

collaborated on the inspection checklist. Rather than using a generic audit checklist, it was tailored to address issues identified in SLOC's EMS and the types of findings anticipated by SLOC. Inspection reports with recommendations for corrective action were issued in the field so that Site Managers had a means to receive and provide immediate feedback. The inspections were generally scheduled on the same day(s) each week so that site personnel knew when to expect environmental compliance personnel. The fact that visits were expected, rather than surprise, serves to emphasize the role of the environmental contractors as assistance from the VCM. Each Friday the inspectors submitted a short written report and Inspection Action Plan (IAP) to PB&L, with a copy to the VCM. Once reviewed and approved, the VCM forwarded the IAP to the Area and Site Managers for their response and / or corrective action.

5.4 ISSUES

Snow Venues

The Snow Venues' build-out construction was much more significant than the ice venues in terms of earth disturbance and the overall footprint of the venues. While each venue was unique, all of the snow venues had some common and significant issues. The most significant environmental issue associated with the earth-disturbing activities was erosion and sedimentation control, crucial to protecting water quality associated with storm water discharges.

The East Canyon Creek is a 303(d) listed or "impaired" waterway under the federal CWA. A TMDL has been established for East Canyon Creek because it is one of the most critically impaired waters in Utah. Storm water and snowmelt runoff from UOP and PCMR enters East Canyon Creek. Silver Creek, another 303(d) listed waterway, receives water from Deer Valley runoff. The Stadium Spring at SHP is a tributary of Deer Creek Reservoir, another 303(d) listed body of water with an established TMDL. Deer Creek Reservoir is important both for its ecological and recreational values. Runoff from SBA flows to the Weber and Ogden River drainages.

Because of the generally steep terrain, the sensitivity of the various water bodies described, and the size of the construction sites, it was expected that the DWQ would closely monitor SLOC's construction activities. ERM performed inspections twice a week at these venues. The focus of the inspections was on erosion and storm water control during build-out, emphasizing the importance of proper use and maintenance of BMPs. The Site Managers made very genuine efforts to keep on top of these

issues, with installation and maintenance of BMPs having priority on par with other construction issues. However, despite their best intentions, it was difficult for the construction teams to complete installation of all the necessary BMPs. This was due to a large unexpected snowfall over the Thanksgiving weekend, coupled with the extension of construction schedules into January. While not regulatory violations, these situations did cause a great deal of concern looking forward into the Spring thaw.

Two of the venues, the UOP and SHP, were subject to dredge and fill permitting under Section 404 of the CWA. However, while these existing permits had programmatic significance (e.g., reporting requirements), they did not have a great impact on day-to-day compliance relative to construction of the temporary facilities. However, it was important to avoid construction activities that would require a new permit or modification to an existing 404 permit. The application and processing time required for either a new or modified permit would have made it impossible to complete construction in time for the Games. This was so critical, UOP's venue development team changed the design of a sponsor tent so as to not trigger a modification to UOP's existing dredge and fill permit or require a Utah stream alteration permit.

Dust control was another critical issue at the snow venue construction sites. Late summer and early fall of 2001 were extremely dry and windy. Each construction site had a dust control plan, and in general the plans were followed. Again, no enforcement actions or regulatory violations were issued for exceeding opacity limits.

Petroleum-product spills were identified as environmental risks during construction of the temporary facilities. SLOC's policies and procedures contained one-page spill response instructions and a form used to report spills to the VCM.

Ice Venues

Because there were fewer temporary facilities constructed at the ice venues, the inspection program at these sites did not begin in earnest until December 2001. The only exception was the UOO, where inspections commenced in late August. The UOO inspections were a little different than all other venues in that ongoing operations were inspected as well as construction of temporary facilities. The primary observations at the ice venues dealt with storage of used oil, planned placement of generators, and fuel storage.

Non-Competition Venues

Some of the non-competition venues underwent extensive modification in order to serve their Olympic roles. Hence, some of the issues raised at these venues were similar to those at the snow venues. A unique problem was encountered in Park City. While excavating to level a parking area, constructors encountered material that appeared to be mine tailings, a condition well-documented in that vicinity, and carefully managed via a Park City ordinance. SLOC sampled the soil and found it to be non-hazardous and atypical of tailings. The soil, however, was sent to a Class III Landfill rather than being used as fill material elsewhere.

A more routine problem was dust control. Fly ash was initially used as a soil additive at UDOT's State Route 224 Park-n-Ride. However, after identifying concerns over potentially exceeding state opacity limits during unusually dry and windy conditions, this practice was discontinued, and the fly ash was replaced by use of geosynthetic materials.

6.0 GAMES-TIME OVERSIGHT

6.1 ORGANIZATION

During Games-time, each competition venue had its own VCO. Oversight of non-competition venues and parking lots were combined, where possible, with competition venues. In the case of the Bus Service Center and some other SLOC facilities (i.e., motor pool and warehouse), oversight was performed by the VCM. Games-time VCOs consisted of volunteers, USFS employees, and a SLOC contractor. Three of the volunteers were current or former environmental regulators from other states; the other three volunteers were local industry environmental staff and the manager of ERM's Salt Lake City office. The USFS provided four of SLOC's volunteer Games-time compliance staff. The Forest Service employees and ERM's local manager also served as VCOs for the Paralympics.

6.2 TRAINING

Most of the Games-time volunteer compliance staff had little prior knowledge of either SLOC's environmental program or the venues themselves. They did however, have significant environmental compliance experience. SLOC's Environmental Department built on this solid foundation by designing and providing a comprehensive training program. The Games-time VCO training consisted of venue-specific training (not environmental) and job-specific training, which consisted of the following sessions:

- One evening of group training on the duties of the VCO and SLOC's environmental program
- Individual venue visits with the build-out VCO and / or VCM

6.3 COMMUNICATION AND COORDINATION

The main goal of the compliance program, reducing risk to SLOC by ensuring that the venues were in compliance with environmental requirements, did not change during Games-time. Some of the tools and communication methods used to accomplish this goal did change. The VCM modified the build-out inspection checklist to create a new Games-time inspection checklist. This checklist is included in Appendix D. Many of the VCOs gave a completed copy of this checklist to the venue

General Manager (GM) at the daily venue staff meeting. In addition to this on-venue communication, every day of the Olympics and the Paralympic Games the VCM and VCOs shared the day's issues in a noon-time conference call. The VCM disseminated news and then each VCM gave their report. Unresolved issues were followed up on by the VCM and/or the VCO, and solutions were typically provided by the following day. The VCM included significant issues from these calls in her report for the SLOC Main Operations Center (MOC) daily report. The MOC daily report allowed significant environmental issues to be communicated Olympics-wide and elevated to the appropriate management level for resolution.

Local environmental health inspectors visited each venue daily, and some venues were even inspected twice per day. The local environmental inspectors reported their draft findings to both the on-site VCO and to their own management. Final findings were then communicated to SLOC via a daily EPHA conference call. The VCM participated in this call following the VCO conference call. The VCM updated individual VCOs on site-specific issues identified in the EPHA call. Many "Hot Topics" identified in the EPHA call were forwarded to the MOC by the VCM.

Since the VCOs had established contact with EPHA inspectors and were experienced in resolving issues with regulators, the VCOs became increasingly involved in resolving health-related issues, not only environmental issues. At many of the venues, the VCOs accompanied the EPHA inspectors on their daily inspections. Hence, the VCO was able to communicate EPHA's concerns to the venue General and Site Managers and help get issues resolved quickly.

6.4 ISSUES

In terms of environmental risk, the Games-time activities were somewhat lower-risk than the pre- and post-Games construction and equipment load-in/load-out phases due to intense preparations designed to eliminate risk. The VCM determined that the highest risk to the environment was associated with potential incidents related to refueling operations and portable toilet servicing. Steps were taken prior to the Games to mitigate the environmental harm from potential spill incidents. Removable mats were purchased and placed over storm drains located near or downgradient from generators; secondary containment structures (e.g., berms) were purchased for or built around generators and fuel storage and dispensing locations; and spill prevention and response training was highlighted.

At the snow venues most of the issues identified by the VCOs and/or EPHA were related to food waste disposal, small fuel spills, and snow and de-icer storage. There were also some minor issues related to mass gathering (e.g., dumpsters too full and lack of drinking water). At the ice venues and non-competition venues, the issues were food safety (e.g., food temperature), sewage spills (from portable toilets), small petroleum product spills, and gasoline storage. Issues that made EPHA's "Hot Topics" list during the Games are listed on Table 6-1.

Table 6-1 Primary EPHA Issues During Olympic Winter Games

DATE	DATE RESOLVED	ISSUE	RESOLUTION
		2002 OLYMPIC WINTER GAMES	
2/2/02	2/4/02	Frozen portable toilets	SLOC- Portable toilets serviced more frequently
2/8/02	2/9/02	Communication of inversion information to athletes and public	EPHA-Fact sheets circulated and communication flow established
2/9/02	2/12/02	Solid waste not being emptied at OVR; need signage for Temporary Mass Gathering at OVR	SLOC- Dumpsters serviced more frequently; install signage
2/10/02		Temperature and potability of water in hand washing stations at SHP	EPHA & SLOC worked with hand washing vendor to provide heated water and sanitary gel
2/9/02 2/16/02	2/10/02 2/18/02	Sinks do not meet code in broadcast catering trailers, food preparation concerns	EPHA- Inspectors resolved with broadcasters and catering company
2/10/02 2/12/02 2/13/02 2/15/02 2/16/02	2/18/02 2/18/02 2/18/02	Problems with bus fumes and potential CO in tents reported from venues	EPHA & SLOC- Initiated investigations with local health departments and EPA
2/11/02 2/12/02	2/13/02	Inadequate infrastructure at some venues for solid waste removal, drinking water, capacity or access to food	SLOC- Changes were made accordingly to improve

		services, toilet facilities	infrastructure
DATE	**DATE RESOLVED**	**ISSUE**	**RESOLUTION**
2/12/02	2/13/02	Need better process for follow up on issues identified on EPHA inspectors checklists.	EPHA- Process reviewed and improved
2/13/02		Concerns about management and adequacy of Materials Recycling Facility (MRF)	SLOC & EPHA closely monitored contractor during Games. Contractor replaced after Games.
2/14/02	2/14/02	Potentially large spill of diesel on Park City Main Street. Regulators require information.	SLOC- Spill was from generator at a sponsor tent and the responsibility of the fueling company. Spill was immediately reported to UHP and PCFSD. UHP and Jardine Petroleum cleaned up spill immediately, no discharge to storm drain.
2/14/02	2/15/02	Timely submittal of daily Temporary Mass Gathering forms and reports.	EPHA- Each agency should check daily to ensure data are entered and reported.
2/17/02	2/18/02	Improper disposal of liquid wastes at outdoor (mountain) venues	SLOC – Reinforce requirements for use of 5-gallon buckets for liquid wastes
2/17/02	2/18/02	Sierra Club press release and article in Deseret News on air quality and concerns over public health.	EPHA- Coordinated public information; clarified environmental and public health message.
2/18/02 through 2/24/02		No new issues identified	No resolutions required

	PARALYMPIC GAMES	
3/13/02	Permitting and environmental issues for decommissioning of Venues and "Park-n-Rides"	SLOC and DEQ to continue monthly meetings

7.0 CONCLUSIONS

SLOC's environmental compliance program faced a range of impediments to meeting its goals, including both typical compliance issues and challenges unique to the size and nature of the Olympic event. Some serious challenges to the success of the environmental compliance program were:

- Environmental compliance had a lower profile during the planning and design phase, but a high profile during construction and Games-time operations
- Schedule-intensive project planning
- Stakeholders with conflicting roles and interests (e.g., regulators as both partners and enforcers)
- Barriers to information exchange such as special event secrecy and security issues
- Careful coordination was needed to ensure that SLOC's partners (e.g., venue owners, service providers, vendors) were assigned and executed their environmental obligations (e.g., plans and permits)

Despite numerous challenges, the environmental compliance program developed and implemented by SLOC for the 2002 Olympic Winter Games was a success in many ways. Appendix E includes and articles entitled "Olympic Winter Games and the Environment" that describes the successes of SLOC's total environmental program.

Environmental and legal risks to SLOC were reduced through implementation of the compliance program. There were no regulatory or statutory violations resulting in fines or corrective action as a result of SLOC operations.

SLOC and the regulatory agencies succeeded in establishing and maintaining an effective working relationship, based on coordination and communication, that provided all parties with essential information and a means to conduct business, inspections and resolution of regulatory issues in a non-confrontational manner.

Community awareness concerning environmental laws and regulations was raised through the extensive employee, volunteer and contractor environmental training programs and the implementation and training associated with the Summit County Emergency Preparedness Network. Whenever possible, SLOC conveyed the message of individual, as well as group, responsibility for compliance with environmental laws and

regulations. The VCM is still being contacted by construction company executives with regards to establishment of proactive compliance programs for their companies.

Stakeholder resolution of environmental compliance issues associated with the Games was exemplary. This may in part be due to the common goal among the stakeholders to host the "best Olympics ever" and SLOC's promise to "carry out their obligation and activities…. in such a manner that they comply with applicable environmental legislation, and wherever possible, serve to promote the protection of the environment." There was the intangible incentive for all to out-perform, go beyond and tenaciously pursue productive resolution of compliance issues. Stakeholder coordination was extensive, time consuming and at times exhausting, but it was also a major contribution to the success of the Environmental Compliance Program for the 2002 Olympic Winter Games.

The environmental compliance program leaves a number of legacies for the venue sites that will continue to benefit from SLOC's efforts. These accomplishments include the following:

- The improved Process Safety Management program and Risk Management Plan at the UOP
- The Emergency Preparedness Network in Summit County
- The enhanced Chemical Safety program and Emergency Response Plan at the UOO
- SPCC and Range Management plans for SHP
- Heightened awareness of environmental compliance at all the venues and within the construction industry that included distribution of storm water and dust control plan templates, hazardous materials registrations and SPCC
- Spill kits and portable secondary containment structures donated to venue owners
- Study on use of Snowmax with no negative environmental trends noted
- Voluntary reclamation of approximately 0.8 miles of access road in the Wasatch foothills

Most importantly, SLOC's environmental compliance program will serve as a model for future Olympic and Paralympic Games.

Appendix A
Environmental Management System Manual

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SLOC ENVIRONMENTAL MANAGEMENT SYSTEM MANUAL

1. INTRODUCTION

1.1 Purpose of SLOC EMS and this Manual

This Manual outlines the Environmental Management System of the Salt Lake Organizing Committee ("SLOC") for the Olympic Winter Games of 2002 (the "Games"). The term "environmental management system" ("EMS") refers to a formalized set of programs, policies, practices and procedures implemented by an organization to achieve and maintain environmental compliance with statutes, regulations, permits and internal requirements.

SLOC is committed to protecting and enhancing the environment in the course of staging the Olympic and Paralympic Winter Games of 2002. In 1994, the International Olympic Committee (IOC) added "Environment" as the third principle of Olympism to compliment the other two principles of "Sport" and "Culture." Salt Lake City was the first host city to have had its bid evaluated according to IOC environmental criteria. SLOC acknowledges that it won its bid to host the Games in part on the minimal impacts the Games would have on Utah's environment. Indeed, SLOC is committed under its contract with its host city to "carry out their obligation and activities . . . in such a manner that they comply with applicable environmental legislation, and wherever possible, serve to promote the protection of the environment."

The EMS, described in this Manual, ensures that SLOC personnel, its contractors, and volunteers comprehend SLOC's commitment to environmental protection and enhancement and carry out their activities in a manner consistent with that commitment. This document is designed for use by SLOC personnel and the above-mentioned Olympic partners so that environmental protection and enhancement will remain a legacy of the Olympic Winter Games of 2002.

SLOC is committed to continuous improvement of its EMS and environment program. Accordingly, this document will be adjusted and amended as new regulatory requirements and other circumstances arise.

1.2 Structure of SLOC's EMS

The structure and contents of SLOC's EMS is patterned after, and consistent with, ISO 14001 ("Environmental Management Systems - Specification with Guidance for Use"). The International Organization for Standardization ("ISO"), a non-governmental federation of national standards organizations, approved and issued ISO 14000 in 1996.[1] Since then, numerous companies and other organizations have recognized and relied on ISO 14001 as a standard for designing and implementing environmental management systems. For this reason, SLOC has chosen to implement an EMS patterned after the ISO 14000 standards.[2] Table 1 provides an overview of this Manual with cross-reference to the relevant elements of ISO 14001.

[1] The American National Standards Institute is the United States' ISO representative.

[2] While ISO 14000 has a formal third-party registration process, most companies and organizations in the United States use ISO 14001 as EMS guidance without formal registration.

Table 1: Overview Of The Corporate EMS Manual And Cross-Reference To ISO 14001			
Section of the Corporate EMS Manual		**Overview of Content**	**Relevant Clause of ISO 14001**
Section 2	**Environmental Policy**	Describes SLOC's environmental commitments and objective. Sets the principles of action for the organization.	*4.2 Environmental policy*
Section 3	**Environmental Management Planning**	Identifies potential environmental impacts, environmental legal requirements, and environmental management program applicable to SLOC's activities and programs.	*4.3 Planning*
Section 3.1	Environmental Impacts	Identifies the potential environmental impacts relating to SLOC's activities.	*4.3.1 Environmental aspects*
Section 3.2	Environmental Legal Requirements	Provides a reference to and an overview of the environmental regulations applicable to the activities of SLOC.	*4.3.2 Legal and other requirements*
Section 3.3	Environmental Management Program	Identifies environmental objectives and targets for achieving sound environmental management. Describes the tasks, responsibilities, and schedule to meet the objectives and targets.	*4.3.3 Objectives and targets* *4.3.4 Environmental management program*
Section 4	**Implementation**	Describes the operational components of the EMS and details the processes and procedures to be followed to ensure achievement of SLOC's commitment and outcomes.	*4.4 Implementation and operation*
Section 4.1	Structure and Responsibility	Defines the key roles and responsibilities for implementing the EMS.	*4.4.1 Structure and responsibility*
Section 4.2	Awareness and Training	Describes the environmental awareness and training programs to ensure effective implementation of the EMS; increase the general awareness of environmental responsibilities of SLOC; and provide SLOC staff with the appropriate tools and support to execute their environmental responsibilities	*4.4.2 Training, awareness and competence*
Section 4.3	Communication and Reporting	Describes key internal and external communication links and identifies reporting requirements associated with environmental performance and management, and EMS implementation.	*4.4.3 Communication*

Table 1: Overview Of The Corporate EMS Manual And Cross-Reference To ISO 14001			
Section of the Corporate EMS Manual		**Overview of Content**	**Relevant Clause of ISO 14001**
Section 4.4	EMS Documentation and Document Control	Provides a reference to and an overview of critical documents and components of the EMS; and document recording, updating, and filing requirements.	*4.4.4 Environmental management system documentation.* *4.4.5 Document control*
Section 4.5	Operational Control	Identifies procedures developed to ensure objectives and targets are achieved.	*4.4.6 Operational Control*
Section 4.6	Emergency and Incident Preparedness and Response	Provides an overview of the range of potential environmental incidents and emergency situations; and planning for emergency and incident preparedness and response.	*4.4.7 Emergency preparedness and response*
Section 5	**Checking and Corrective Action**	Describes processes used to assess environmental performance of SLOC relative to the environmental policy, objectives and performance indicators.	*4.5 Checking and corrective action*
Section 5.1	Monitoring, Measurement and Performance Evaluation	Describes requirements for conducting audits of environmental performance and EMS implementation.	*4.5.1 Monitoring and measurement*
Section 5.2	Management of Non-compliance	Describes the identification, investigation, reporting, and corrective action of non-compliance.	*4.5.2 Non-compliance and corrective and preventive action*
Section 5.3	Records	Describes collection and maintenance of environmental records (e.g. training, results of audits and reviews).	*4.5.3 Records*
Section 6	**Environmental Management System Audit and Review**	Describes the process for periodic review of the effectiveness of the EMS to ensure environmental performance and continuous improvement commitments are achieved.	*4.5.4 Environmental management system audit* *4.6 Management review*

2. SLOC ENVIRONMENTAL POLICY

This policy applies to all SLOC employees; all SLOC-related venues, functions, and operations; contractors; and suppliers of goods and services.

It is SLOC's policy to achieve a high standard of environmental protection and enhancement in every aspect of planning for and staging the Olympic and Paralympic Winter Games of 2002. SLOC's approach to environmental management seeks continuous improvement by integrating an internal review process and the concerns of both regulatory agencies and citizen-based environmental organizations into this Environmental Management System.

Specifically, it is SLOC's policy to:

- Display environmental sensitivity in venue development and operation. This includes compliance with applicable Federal, State and Local laws and regulations; developing employee awareness; and factoring environmental considerations into procurement practices whenever environmentally and economically practical.
- Support programs to educate the public in environmental issues and raise the general consciousness of Utahns and world guests in the importance of protecting and preserving the environment.
- Leave a legacy of environmental enhancement and improvement.

In concert with this policy, in 1995, SLOC's Board of Trustees approved a detailed Environmental Platform outlining how SLOC will conduct business relative to the environment to ensure a lasting Olympic environmental legacy for years to come. SLOC Board Members, staff, volunteers, and others involved will strive to abide by the platform that addresses energy and water conservation; environmental education; and source reduction and waste management before and during the Games, as well as during Games close-out. Staff and volunteers shall recycle; minimize consumption of energy while in the office; strive to use less paper; use public transport and car pools wherever possible to reduce air pollution and traffic; and promote the continuance of clean air and water. The complete text of the SLOC Environmental Platform is included on the SLOC Information Network (Policies & Procedures/Environment). The following summarizes the twelve-point Environmental Platform:

1. **Management.** To integrate environmental sensitivity into every aspect of the games in its administration through budgetary, organizational and procedural means.

2. **Environmental design and construction.** To ensure that design and use of Olympic facilities adequately assess and minimize environmental impacts and complement natural surroundings.

3. **Temporary facilities.** To ensure that temporary facilities can be reused in a manner that benefits the entire community. Also, to restore any natural areas that are impacted by the installation and removal of such facilities.

4. **Energy and water conservation.** To build facilities and adopt practices which conserve our valuable natural resources.

5. **Materials management.** To responsibly manage material selection, use, consumption and disposition to minimize environmental impact.

6. **Official suppliers, contractors, and sponsors.** To work with suppliers, contractors, and sponsors to ensure that products and the methods in which they are delivered are environmentally responsible.

7. **Cultural events and ceremonies.** To use high profile events to further environmental education and to serve as a model for environmentally responsible event management.

8. **Sports and sports organizations.** To encourage the Olympic teams and sports organizations to develop environmental messages and profiles that are suited to the sport itself and to the Olympic spirit.

9. **Environmental education.** To realize the Olympics as a unique vehicle to educate both children and adults regarding environmental issues.

10. **Transportation.** To minimize transportation impacts, their related environmental problems, encourage mass transit and other environmentally responsible modes of transportation.

11. **Lodging and food services.** To provide environmentally sensitive lodging and food services for our visitors.

12. **Environmental monitoring.** To monitor the progress of SLOC in meeting its environmental goals.

3. ENVIRONMENTAL MANAGEMENT PLANNING

3.1 Environmental Impacts

SLOC activities that give rise to potential environmental impacts include design and construction (temporary and permanent facilities); and operation and management (all SLOC venues/ functions). Games-time events will involve over 20 sporting events staged at 10 primary competition venues, as well as numerous activities, support, and other functions occurring at non-competition venues such as the Olympic Village, hospitality centers, motor pools, warehouses, and park and ride lots. Descriptions of these venues can be found on the SLOC Information Network (Venues). The potential environmental impacts of these activities that may pose a risk to the environment are identified in Table 2. The nature and significance of these risks will vary from project to project. SLOC environmental personnel will periodically evaluate and update this table as necessary. Section 3.3 responds to these risks in terms of SLOC's environmental policy and provides a process for risk management in the form of an Environmental Management Program.

Table 2: Summary of Potential Environmental Impacts

Issue	Project Phase	
	Design and Construction	**Operation and Management**
Releases to Air	Fugitive Dust Vehicle Emissions Ozone-depleting substances Greenhouse gases	Fugitive Dust (road salting) Greenhouse gases Vehicle emissions (public and private vehicles during major events)

Table 2: Summary of Potential Environmental Impacts		
Issue	**Project Phase**	
	Design and Construction	**Operation and Management**
	Generators	Mechanical ventilation Generators
Releases to Water	Stormwater mgmt, drainage, flooding Sewage collection and domestic wastewater (construction sites) Discharge from sedimentation basins Spills Soil erosion and sedimentation Pollution sources (oils, fuels, wastewater) Soil and groundwater contamination	Stormwater mgmt, drainage, flooding Water supply Soil erosion and sedimentation Surface/groundwater quality Use of pesticides/herbicides Dangerous goods/ bulk liquid storage Sewage collection, treatment and wastewater Soil and groundwater contamination
Waste Management and Disposal	Demolition wastes Construction wastes Packaging wastes Litter/garbage Contaminated waste handling and disposal	Solid waste generation (major events, facilities, administration) Trade waste Cooking wastes Special wastes (medical, film) Packaging wastes (paper, cardboard, glass, plastics, etc.) Litter/garbage
Contamination of Land	Spills Chemical storage Fuel installation Spent ammunition	Spills Chemical storage Fuel installations Spent ammunition
Impact on Local Communities	Access and traffic disruptions Construction noise Fugitive Dust	Access and traffic disruptions Noise (major events) Increased traffic through local areas, parking problems, congestion
Use of Raw Materials and Natural Resources	Energy usage (construction requirements) Construction materials Life cycle impacts of construction materials	Energy usage (facilities, vehicles) Raw material requirements (facilities, administration, maintenance)
Ecological Aspects	Increased access to wild areas Noise impacts on wildlife Disturbance of sensitive species Destruction of habitat	Noise impacts on wildlife Ecosystem disruption Disturbance of sensitive species
Heritage Aspects	Increased traffic to features of heritage significance	Increased traffic to features of heritage significance
Emergency Situations	Spills/Accidental Releases Fire Threats	Spills/Accidental Releases Intentional Releases

3.2 Environmental Legal Requirements

Numerous environmental legal requirements set forth in federal and state statutes and regulations, and in local ordinances apply to SLOC activities and operations. SLOC's Environment Function is responsible for tracking applicable laws and regulations and identifying those related to the organization's activities. The Environment Function utilizes a variety of information sources to track, identify, and evaluate applicable laws and regulations, including:

- Maintaining open communication with various regulatory agencies. Agencies can provide explanation and guidance; research; case studies; and contacts for additional information.
- Libraries. The University of Utah has offered the use of their extensive collection to support SLOC's planning of the Games.
- Internet. The Internet supports a host of sites supported by Federal, State, and Local agencies and industry groups that provide text of regulations and guidelines and discussion of upcoming regulations and potential impacts.
- Hotlines. The EPA supports hotlines that field questions relating to many different regulations during regular business hours.
- Consultants and attorneys. SLOC can access a variety of professional services on an as-needed basis to assist in the evaluation and applicability of laws and regulations.

The principal environmental legal requirements potentially relating to SLOC's activities are described in Table 3. The relevance of the requirements varies from situation to situation, and project to project. This is not an exhaustive list of all environmental requirements that may be applicable to SLOC activities. A more detailed discussion of these environmental requirements can be found on the SLOC Information Network (Policies & Procedures/Environment). SLOC employees and volunteers will be trained to site-specific environmental requirements on an as-needed basis. New legislative requirements will be identified as necessary.

Table 3: Summary of Potentially Applicable Requirements

Regulation/Citation	Description	Applicability
Hazardous Materials/ Waste Management		
• 29 CFR 1910	• Disclosure of hazards to workers and public	• Facility with storage/use of hazardous substances.
• 40 CFR 370	• Disclosure of hazardous substances inventory to regulatory authorities	• Facility handling/ storing more than threshold planning quantity of certain hazardous substances.
• 40 CFR 260-270 UT R315-1 to 50	• Hazardous waste (HW) generation, storage, transport and disposal	• Facility managing HW.
• 40 CFR 262	• Hazardous waste manifests	• Facility managing HW.
• 40 CFR 302.4; 40 CFR 112; 40 CFR 355, 40 CFR 117; and 40 CFR 77	• Spill/release reporting requirements	• Accidental release to air, water, or soil.

Table 3: Summary of Potentially Applicable Requirements		
• Utah R315-316	• Infectious Waste Requirements	• Facility generating medical waste.
Prevention of Accidental Releases, Process Safety Management, Emergency Response		
• 40 CFR 68 - Clean Air Act § 112(r)	• Risk Management Program requirements and implementation	• Facilities storing threshold quantities of regulated substances.
• 29 CFR 1910.119	• OSHA Process Safety Management program requirements and implementation	• Facilities storing threshold quantities of highly hazardous chemicals.
• 40 CFR 355 - 370	• Emergency Planning and Community Right-to-Know (EPCRA)	• Participate in emergency planning programs; hazardous chemical inventory submittal.
• 40 CFR 112	• Spill Prevention, Control, and Countermeasures (SPCC) – plan development and implementation	• Facilities storing petroleum products exceeding threshold limit that may reach navigable water.
Water Quality/ Discharges		
• UT R317-8; CWA§ 402, 404	• Utah Pollution Discharge Elimination System Permits and Wetlands Permits	• Construction disturbing >5 acres; facility/activity discharging to water body; storm water control.
• Utah Code Ann 73-3-29	• Utah Stream Alteration Permit	• Stream crossings for road construction.
• UT R317-1-2	• Water Quality Construction Permit	• Construction of stormwater retention pond or treatment system.
• UT R317-5	• Underground Wastewater System Permit	• Construction of septic system
Fuel Storage and Vehicle Maintenance		
• R307-14-3.C(2)	• Fuel Vapor Emissions Control	• Certain fueling facilities.
• UT R311-200 to – 212	• Underground storage tanks (UST)	• Facilities with USTs.
• UT R315-15-2; R315-15-1.6	• Used oil requirements	• Facilities generating used oil or oil filters.
• 40 CFR 260-270 UT R315-1 to 50	• Hazardous waste generation, storage, transport and disposal	• See above.
• 40 CFR 112	• SPCC	• See above.
• 40 CFR 355-370	• EPCRA	• See above.
Potable Water		
• UT R309-102	• Public drinking water system requirements	• Facilities with public or private system providing water for human consumption and other domestic uses.
Ammonia Refrigeration Systems		
• 29 CFR. 1910	• Process Safety Management Program development and implementation	• Facilities storing > 10,000 lbs. anhydrous ammonia.

Table 3: Summary of Potentially Applicable Requirements		
• 40 CFR 68 - Clean Air Act § 112(r)	• Risk Management Program (RMP) requirements and implementation	• Ammonia refrigeration systems are subject to 'general duty' reqts; facilities storing > 10,000 lbs. anhydrous ammonia must develop RMP.
• 40 CFR 355	• EPCRA	• Facilities storing > 500 lbs. ammonia must submit annual report to LEPC.
Fugitive Dust Control		
• UT R307-205	• Fugitive Dust	• Activities disturbing > 0.25 acres must take measures to mitigate dust.

3.3 Environmental Management Program

SLOC's environmental management program (EMP) translates SLOC's environmental policy into action. The plan outlines SLOC's objectives and targets, as well as tasks necessary to accomplish those targets. The plan ensures integration of environmental management activities into all phases of planning and staging the Games, as cross-functional teams are often responsible for accomplishing any single task. The objectives and targets were designed to minimize potential environmental impacts, such as those discussed in Section 3.1. The EMP is expected to be dynamic, and will be modified as objectives and targets are revised or added. A copy of the EMP is included in Appendix 1.

4. IMPLEMENTATION

4.1 Structure and Responsibilities

SLOC's Environment Function is headed by the Environmental Director. The Environmental Director has overall responsibility for EMS implementation, but is supported by an environmental staff, as well as staff from other SLOC functions. Key staff and service provider responsibilities for the implementation of the EMS are set forth in Table 4.

Table 4: Key Environmental Responsibilities	
Position(s)	**Responsibility**
President and Chief Executive Officer	Delivery of the 2002 Olympic Winter Games in accordance with the "Environmental Platform," the EMS and all legal requirements. Reports on environmental performance to the SLOC Board of Trustees. Cosign State of the Environment Report.
Chief Operating Officer/Chief Financial Officer	Ensure adequacy of resources to implement EMS, other SLOC environmental obligations and all environmental legal requirements. Ensure attendance of SLOC staff at environmental training. Review SLOC environmental reports.

Table 4: Key Environmental Responsibilities	
Position(s)	**Responsibility**
Senior Vice President, Venues	Ensure environmental requirements relating to each SLOC venue, facility and activity are identified, understood and implemented. Maintains appropriate environmental contract conditions and documentation for contracts where SLOC is the regulated entity. Consider alternative designs to ensure environmentally sensitive, acceptable approaches. Assisted by SLOC environmental staff and consultants, construction and design staff conducts field studies to avoid to the extent practicable impacts from construction on nesting raptors, wetlands and other sensitive areas. Adopt the principle of constructing facilities which are harmonious with the aesthetic values of the surrounding community, and which are compatible with the natural environment and aesthetic factors. Consideration should be given to extending facilities' useful lives, minimizing consumptive use of resources in both construction and operation of facilities, and potential reclamation/ reuse of materials required for temporary facilities. Ensure that construction plans and specifications contain requirements for the mitigation of environmental after effects. Assess environmental concerns before starting a new activity or project and before decommissioning a facility or leaving a site. Ensure the completion of audits, reviews and corrective actions. Ensure sites for temporary facilities will be restored/ reclaimed to the condition determined appropriate and with the concerns of the community in mind.
Environmental Director	Implementation of EMS and all other SLOC environmental commitments. Review and monitor environmental performance of all SLOC activities. Report to the Senior Vice President, Venues and stakeholders based upon environmental reports, audit reports and other information. Require that design of Olympic Winter Games-related construction projects include environmental background and baseline studies, so as to adequately characterize the site's setting for further analysis of environmental mitigation and enhancement alternatives, and for subsequent environmental evaluations. Prepare annual "State of the Environment Report." Co-Chair Environmental Advisory Group meetings. Ensure appropriate environmental management training is established and provided. Review and update EMS every six months, and otherwise ensure on-going improvement to the EMS and other policies and procedures. Maintains EMS documentation. Manage environmental compliance matters, with assistance of legal counsel, when required. Ensure appropriate reporting of environmental incidents to regulatory authorities. Ensure implementation of post-games closure and reclamation commitments. Maintain environmental permit book and register of environmental commitments for post-games handover of SLOC venues and activities.
Level 1 Venue/Facility Managers	Coordinate, cooperate and provide support in connection with environmental compliance inspections by regulatory authorities. Coordinate, cooperate and provide support in connection with SLOC environmental audits and inspections. Ensure the close-out of all non-compliance.

Table 4: Key Environmental Responsibilities	
Position(s)	**Responsibility**
	During Games time, ensure weekly site inspection of the venue/facility to ensure environmental control and performance. Ensure periodic site inspection of the contractors' environmental control and performance relating to contractor activities at the venue/facility. Report environmental incidents to SLOC Environmental Compliance Officer. Ensure attendance by staff at environmental training sessions.
Environmental Compliance Officer	Ensure environmental legal requirements relating to the venue/facility and related activities are identified, understood and implemented. Ensure implementation of EMS. Conduct environmental audits and inspections of venues, facilities and other SLOC activities. Coordinate and implement other EMS and compliance tasks as directed by Environmental Director.
Environmental Project Manager	Ensure implementation of EMS. Coordinate and implement other EMS and environmental tasks as directed by Environmental Director. Routinely update environmental program information concerning venues, policy statements, and planning on the SLOC web site. Communicate with SLOC liaison assigned by DEQ as needed.
Environmental Project Coordinator	Ensure implementation of EMS. Coordinate and implement other EMS and environmental projects and tasks as directed by Environmental Director.
Environmental Assistant	Maintain environmental permits, monitoring reports, correspondence, notices of violation and other documentation relating to environmental matters. Coordinate and implement other EMS and environmental tasks as directed by Environmental Director, Environmental Compliance Officer, or Environmental Project Manager.
Event Managers	Identify/ implement all applicable environmental management responsibilities.
Service Providers (Contractors)	Project execution in compliance with the requirements of environmental legal requirements; EMS (including emergency and incident preparedness and response); and contract(s) terms (including declaration of compliance). Record keeping/ reporting, as appropriate, of daily site inspections; audits; environmental incidents; recurrence prevention; reports required by regulatory authorities; training records; and monitoring reports/ records.
Volunteers	Assist in implementing recycling and waste minimization activities. Report to appropriate SLOC personnel environmental non-compliance conditions or concerns.
Human Resource Function	Place appropriate environmental responsibilities in position descriptions and staff contracts. Ensure that appropriately qualified and experienced personnel are recruited to key environmental advice and decision making positions.
Procurement	Administer purchase orders and contract process for good and services.
Venues Function	Includes transportation, logistics and procurement, temporary facility design, permanent construction, and environment. All Venues employees are involved in the implementation and compliance with the EMS with respect to the responsibilities of their function.
Environmental	Provide environmental advice to Environmental Director. Review and provide

Table 4: Key Environmental Responsibilities	
Position(s)	**Responsibility**
Advisory Committee	recommendations regarding environmental performance.

4.2 Awareness and Training

Effective implementation of the EMS requires SLOC management, staff, contractors and volunteers to receive appropriate environmental, safety and emergency response training. Table 5 describes the SLOC's training program.

Table 5: Elements of the Environmental Training Program			
Element	**Trainees**	**Timeframe**	**Responsibility**
Human Resources Orientation	New Employees and Volunteers	Ongoing	Human Resources
Facility Specific OSHA Training	Facility Operators	Ongoing	Utah Olympic Park Staff
On-line Policies and Procedures	Staff	Ongoing	Environmental and Human Resources
Venue-specific Training	Staff/ Volunteers	Test Events and Pre-Games	Environmental and Human Resources

4.3 Communication and Reporting

SLOC has established both internal and external communication and reporting requirements, as described below. An overview of Environmental Communications is set forth in Table 6, and an overview of Environmental Reporting is set forth in Table 7.

Table 6: Overview of Environmental Communications			
Communication Element	**Purpose**	**Process**	**Responsibility**
Environmental Staff Meeting	Discuss project status, compliance issues, environmental objectives, and EMS implementation.	Weekly, or as required	Environmental Director
Senior Management Meeting	Environmental Director discusses and coordinates environmental compliance and EMS implementation issues with Senior Management.	Periodic, as required	Environmental Director
Environmental Advisory Committee (EAC)	EAC includes representatives of public interest groups; federal, state, and local government; athletes; educators and general public. Working groups have been formed to address issues such as, sustainable facilities; materials management; education; athlete	Quarterly	EAC Members

Table 6: Overview of Environmental Communications			
Communication Element	**Purpose**	**Process**	**Responsibility**
	involvement; monitoring; hotels; transportation; and procurement.		
SLOC Web Site	Includes environmental documentation and information concerning venues, SLOC's policy statements, and program planning.	Routinely updated	Environmental Project Manager
SLOC Information Network (SLIN)	Compiles EMS documentation, policies and procedures.	Routinely updated	Environmental Assistant
Environmental Summits and Conferences	Aimed at uniting key environmental decision-makers in the community to discuss environmental matters of common concern. Forum to exchange ideas to heighten environmental education and awareness.	Per schedule	Environmental Staff
Liaison with DEQ	Coordination of program elements and compliance.	As needed	Environmental Project Manager
Liaison with EPA	Coordination of program elements and compliance.	As needed	Environmental Project Manager
Liaison with USDA Forest Service	Coordination of tree and education program elements.	As needed	Environmental Project Coordinator
Media and Public Relations	Communicate environmental performance and achievement to public and stakeholders	As required	Media and Environmental Director

Table 7: Overview of Environmental Reporting			
Reporting Element	**Purpose**	**Process**	**Responsibility**
EXTERNAL REPORTING			
Annual Environment Report	Covers Environmental Program accomplishments for the proceeding year	Annual	Prepared by Environment Director. Available to public.
Environmental Incident Notification and Reporting	Ensure proper notification and reporting to proper Agencies	Incident specific	Environmental to notify Agencies as required
Environmental Monitoring and Reporting	Ensure compliance with various environmental permits and approvals	Permit/ Approval specific	Environmental to prepare required submittals
INTERNAL REPORTING			
Environmental Incident Investigation and	Operators notify SLOC Environmental Function of situation	See Form in Appendix 2,	Operations prepares for Environmental

Table 7: Overview of Environmental Reporting			
Reporting Element	**Purpose**	**Process**	**Responsibility**
Reporting		also on SLIN	
Senior Management Report	Update Senior Management regarding environmental compliance and EMS implementation	Periodic	Environmental Director to Senior Management
Facility Audit Results and Corrective Action Reports	Check on compliance status of facilities and operations	Periodic	Environmental to Operations and Senior Management
EMS Audit Reports	Assess whether EMS has been properly implemented and maintained. Identify areas of potential program improvement.	Annual	Environmental Compliance Officer to Environmental Director.

4.4 SLOC EMS Documentation and Document Control

Clear documentation of the core elements of the EMS is necessary to achieve sound environmental management. The most current version of EMS documentation, procedures and policies will be made available to all SLOC employees on the SLOC Information Network (Policies & Procedures/Environment). The Environment Function is responsible for periodic review and update of the documents. All revisions to EMS documentation must be approved by the Environment Director.

The Environment Function will coordinate the removal of obsolete documentation and posting of current documentation on the SLOC Information Network with Human Resources. Human Resources is responsible for ensuring that communication of changes and revisions are announced to all employees.

The EMS is a living document comprised of many forms, policies, and procedures, in addition to this manual. As policies, procedures, forms and guidance are developed, the document index will be updated to reflect the inclusion of new material and to post the latest date of revision. Additionally, each page of each document will be clearly marked with the date of the latest revision. Table 8 describes the type, purpose and location of the documents comprising SLOC's EMS.

Table 8: EMS Documentation		
Document	**Purpose**	**Location**
SLOC EMS Manual	To describe the core elements of SLOC's EMS for the benefit of staff, contractors and stakeholders.	Hardcopy available to staff, contractors and stake holders from SLOC Environment Director. Electronic versions available to SLOC staff on SLOC Information

Table 8: EMS Documentation		
Document	**Purpose**	**Location**
		Network.
SLOC Environmental Forms, Procedures, Policies and Guidance	Compiles all forms, policies, procedures, and guidance adopted by SLOC for environmental management purposes.	Hardcopy available to staff and contractors from SLOC Environment Director. Electronic versions available to SLOC staff on SLOC Information Network.
Environmental Permit Book	Compiles permits, approvals and other commitments relating to SLOC activities.	Hardcopy available to staff and contractors from SLOC Environment Director.

4.5 Operational Control

To ensure SLOC's environmental policy is followed and objectives are achieved, operational procedures must be developed. Documented procedures will be developed for SLOC operations and activities that may have a significant impact on the environment, such as hazardous material handling and storage; emergency response, spill notification and reporting; used oil handling; petroleum storage, waste management, and site reclamation and closure. Procedures will help ensure environmental compliance and consistent performance. SLOC procedures and policies are posted on the SLOC Information Network (Policies & Procedures/Environment), or hard copies can be obtained from the Environment Function. The most current list of procedures can be found in the EMS Document Index.

4.6 Emergency Preparedness and Response

The SLOC Emergency Management Plan Components (Appendix 3) describes the components of SLOC's emergency management program to ensure adequate preparedness and responses to accidental or intentional release of hazardous substances, or similar emergency, during the 2002 Olympic Winter Games. Each venue shall develop and implement a site-specific emergency response and contingency plan consistent with the Emergency Management Plan Components.

5. CHECKING AND CORRECTIVE ACTION

5.1 Monitoring, Measurement and Performance Evaluation

A monitoring and measurement program is important to gauge environmental performance, identify where corrective action is needed, and improve performance. The following sections describe environmental auditing and compliance review and tracking objectives and targets. Auditing EMS implementation and performance is described in Section 6.

5.1.1 Environmental Auditing and Compliance Review

SLOC's environmental auditing and compliance review program can be divided into three "levels" based on the nature of SLOC's ownership and involvement with construction, operation, and other activities with the venue or facility. Table 9 identifies each of the three levels and facilities/venues for each level.

Table 9: Environmental Management Program Levels

Level	Description	Facilities/Venues
1	Facilities/venues designed, constructed and operated by SLOC or SLOC direct contractors.	Utah Olympic Park, Soldier Hollow, Utah Olympic Oval
2	Facilities/venues leased by SLOC and operated by third party. Moderate to significant modifications to or construction of permanent facilities by venue owner in preparation for Games. SLOC participation in planning and oversight of modifications or construction. Significant temporary facilities adaptations by SLOC. SLOC operates portions of the facility for test events and games time only.	Deer Valley Resort, Park City Mountain Resort, Snowbasin Ski Area, The Peaks Ice Arena, Olympic Village, Steiner Ice Arena, Bus Service Centers
3	Facilities/venues leased by SLOC and operated by third party. No significant modification to or construction of permanent facilities in preparation for Games. Moderate to significant temporary facilities adaptations by SLOC. SLOC operates all or a potion of facility/venue for test events and games only.	Salt Lake Ice Arena, E-Center, Rice-Eccles Olympic Stadium, The Ice Sheet at Ogden, Acord Ice Arena, Murray Ice Arena, Main Media Center, Olympic Medals Plaza, Park & Ride Lots, SLOC Warehouses, SLOC Motor Pool

Environmental audits and compliance reviews provide a systematic method to evaluate environmental performance with respect to environmental policies and regulations. Results will be used to verify and improve environmental management procedures, compliance and performance. Appendix 4 includes the Environmental Compliance Questionnaire to be used during compliance audits of Level 1, 2, and 3 facilities, as appropriate, given the nature of the facility or venue. Table 10 below describes the types and frequency of audits to be conducted.

Table 10: Environmental Audit and Compliance Review		
Audit/Review Type	**Frequency/ Timeframe**	**Responsibility**
Facility Compliance Audits (permanent facilities)	Level 1 venues-annually; Level 2 and 3 venues-anticipate inspections occur first half 2001. Need for subsequent inspections based on results.	Environmental
Pre-build out Review and Inspection (temporary facilities)	Level 1, 2, and 3 venues: Regular involvement during planning stages. Inspect facilities approximately 2 months prior to build out completion	Environmental
Pollution Control Equipment and Process Equipment	Weekly, during Games time operations for Level 1, 2, and 3 venues	Facility-based Operations
Product and Waste Storage Areas	Weekly, during Games time operations for Level 1, 2, and 3 venues	Facility-based Operations

5.1.2 Tracking Objectives and Targets

A series of indicators were developed (see Appendix 5) to track SLOC's progress towards meeting the environmental goals and objectives listed in the EMP (Section 3.3). No single indicator provides a comprehensive measure of environmental performance; however, they should help SLOC identify where progress has been made and opportunities to continually improve the environmental program.

5.2 Management of Non-Compliance

Any non-compliance identified through internal audits/inspections or by regulatory authorities, stakeholders or concerned citizens shall be immediately addressed through the following steps: (1) SLOC Environmental Director gathers and evaluates all available information regarding the non-compliance issue; (2) SLOC Environmental Director consults with legal counsel regarding legal requirements and corrective action; (3) SLOC Environmental Director prepares a corrective action plan to resolve the non-compliance matter; (4) SLOC Environmental Director informs the Senior Vice President, Venues regarding the non-compliance matter and proposed corrective action (serious non-compliance matters are immediately reported to SLOC's General Counsel and Senior Vice President, Venues, with additional briefings of other SLOC officers as deemed appropriate); and (5) SLOC Environmental Director monitors implementation of all corrective action items.

5.3 Records

Documents, such as records, plans and protocols, permits and licenses, reports and studies, miscellaneous program documents and external communications, provide concrete evidence of

quality environmental management. The Environment Function maintains a file system for record retention that includes internal and external communications; audit reports and findings; permits, miscellaneous studies, and incident reports. Facilities are also responsible for record retention, which includes documents such as MSDSs, facility training records, permits, and emergency response procedures.

6. ENVIRONMENTAL MANAGEMENT SYSTEM AUDIT AND REVIEW

SLOC has adopted this EMS to govern its activities that may impact the environment. Verifying the implementation of the EMS is a critical component of ensuring its success and vital toward achieving continual improvement. A periodic review program has been developed which will allow SLOC to monitor the effectiveness of the EMS, and make changes to the program, policies, objectives and targets as necessary.

As described in the table below, the Environment Function will review the EMS on an annual basis. The basis of the review will be the SLOC Environmental Management Checklist (Appendix 6); however, the review will also include analysis of the effectiveness of policies and procedures, as well as a status report on reaching objectives. Results of the review will be shared with Senior Management and other personnel as necessary. On an annual basis, Management will also review the EMS to ensure its continuing suitability, adequacy and effectiveness. Management review will address the possible need for changes to policy, objectives, targets, or other elements of the system. Additionally, consistent with SLOC's Environmental Platform, SLOC encourages all owners and operators of Olympic-related venues and facilities to adopt similar environmental management programs.

Table 11: EMS Audit and Review

Audit/Review Type	Frequency/ Timeframe	Responsibility
EMS Implementation	Annually. Anticipate reviews to occur 1st half 2001 in conjunction with compliance audit.	Environmental with outside assistance as necessary
Management Review of EMS	Annually. Anticipate review to occur 2nd half 2001.	Management, with assistance as necessary

7. ACRONYMS

CFR	Code of Federal Regulations
CWA	Clean Water Act
DEQ	Utah Department of Environmental Quality
EAC	Environmental Advisory Committee
EMP	Environmental Management Program
EMS	Environmental Management System

EPA	Environmental Protection Agency
EPCRA	Emergency Planning Community Right-to-Know Act
HW	Hazardous Waste
IOC	International Olympic Committee
ISO	International Organization for Standardization
MSDS	Material Safety Data Sheet
OSHA	Occupational Safety and Health Administration
RMP	Risk Management Plan
SLIN	SLOC Information Network
SLOC	Salt Lake Organizing Committee
SPCC	Spill Prevention, Control and Countermeasures
USDA	United States Department of Agriculture
UST	Underground Storage Tank
UT	Utah

Appendix 1
Environmental Management Program – Objectives and Targets

ENVIRONMENTAL MANAGEMENT PROGRAM
OBJECTIVES AND TARGETS

Policy: Display environmental sensitivity in venue development and operations.

Objective: Venue Compliance - with all applicable Federal, State, and Local laws and regulations during design, construction, operations, and management.

Target: Zero violations of environmental regulatory requirements at SLOC controlled venues and facilities.

Task	Responsibility	Schedule
Evaluate need for/ acquire permits and approvals.	ECM; Venues; EO	Continuous
Compile permits, approvals, other commitments relating to SLOC activities.	ECM	Continuous
Communicate environmental requirements and procedures to employees, volunteers, and contractors to promote environmental awareness and avoid negative impacts.	EF staff	Continuous
Maintain open lines of communication with environmental regulators and other local agencies.	EF staff	Continuous
Compliance audit program for all venues.	ECM	Continuous

Objective: Protect and Improve Air Quality.

Target: Prevent air emissions and conserve energy.

Task	Responsibility	Schedule
Develop procedure to control fugitive dust during construction and operations.	EF; VD	completed
Develop and implement volunteer carpool program.	UTA; VS	ongoing
Develop and implement SLOC fleet vehicle program – to include use of CNG fueled vehicles.	TF	completed
Develop and implement Games time Transportation Plan to efficiently move athletes, officials, volunteers, and spectators to and from venues using mass transit.	TF; EF	ongoing
Develop and implement Games time Transportation Demand Management (TDM) system to further reduce traffic congestion, conserve energy, and mitigate air quality impacts. Includes use of compressed natural gas busses (CNG); and telecommuting, compressed work weeks, and flex schedules.	UTA; UDOT; TF; EF	ongoing
Develop Transportation Plan. Organize training and competitions to minimize need for travel by car.	TF; EF	completed

Objective: Protect Wetlands, Fragile Habitat, and Other Sensitive Ecosystems.

Target: Minimize negative environmental impacts to ecosystem related to new construction.

Task	Responsibility	Schedule
Evaluate sites considered for construction of permanent venues or support facilities (e.g., Soldier Hollow, park and ride lots) for potential environmental impacts. Consider alternative and mitigation projects in site selection/ development.	Venues; EF	completed

Objective: Resource Conservation and Management.

Target: Develop plans and procedures to promote resource conservation and management in SLOC development and operations activities.

Task	Responsibility	Schedule
Develop and implement environmental mitigation/restoration plans that comply with conditions specified in applicable permits (i.e., Nationwide permits at Soldier Hollow and UOP).	ECM, Venues	Before, during, and post Games
Develop and implement site-specific closure, reclamation, revegetation and reforestation plans for temporary facilities where necessary.	ECM, Venues, Regulatory authorities	Before, during, and post Games
Factor energy/resource conservation and management into new construction planning, design, construction and operation.	VD; EF	completed

Target: Zero Waste.

Task	Responsibility	Schedule
Recommend food contractors minimize waste by reducing packaging, dispensing individually wrapped condiments only upon request; provide recyclable/ compostable dishware, etc. when applicable.	EO, EPM, FS	ongoing
Develop procurement policy that factors environmental considerations into procurement practices whenever environmentally and economically practical.	Procurement; EPM	completed
Develop and implement comprehensive cleaning solid waste management and recycling program that combines recycling, composting, waste to energy systems, etc…in order to achieve zero waste goal.	EF, EO, FS, Media Relations, IT	ongoing

Objective: Develop appropriate operational procedures and training programs for employees and volunteers. Ensure communication of procedures to appropriate personnel and promote employee awareness of their environmental management responsibilities.

Target: Safe, clean, environmental handling practices/ procedures.

Task	Responsibility	Schedule
Develop venue specific compliance plans.	ECM	Level 1 - 12/00; Level 2 and 3 - 7/01
Develop hazardous substance management and handling procedures.	ECM	ongoing
Develop waste management procedures (solid waste, cooking waste, medical waste…).	ECM, EO, FS	ongoing
Develop spill response procedures.	ECM, Security, EO	Level 1 - 12/00; Level 2 and 3 - 7/01
Develop vehicle fueling procedures.	ECM, TF	Ongoing
Develop petroleum product storage procedures.	ECM, Security, EO	Ongoing
Develop used oil management procedures.	ECM, TF, EO, Security	Ongoing
Develop site housekeeping policy including keeping facilities and venues clear of litter, and utilizing environmentally friendly cleaning products.	ECM, EO	Ongoing
Develop site closure and reclamation policy and procedures.	ECM, Venues, EO	Ongoing
Develop policy for employees and volunteers to offer suggestions for environmental improvement.	EF	Ongoing
Develop venue-specific emergency response plans.	ECM, EO, venue staff	Level 1 - 12/00; Level 2 and 3 - 7/01

Objective: Water Quality.

Target: No degradation of water quality.

Task	Responsibility	Schedule
Establish appropriate silt fencing and other sediment control features at 100% of the construction sites pertaining to Olympic venues and facilities.	Venues, TF	ongoing
Prevent contamination of land and water bodies through spill prevention and response.	Venues, TF, EF	ongoing
Aquatic Habitat Restoration Projects – conduct feasibility studies to improve habitat for aquatic wildlife and migratory birds at Decker Lake and Soldier Hollow.	EPM, Venues, outside consultants	ongoing

Policy: Leave a Legacy of Environmental Enhancement and Improvement

Objective: Air Quality.

Targets: Zero Net Air Emissions during Games time. Encourage use of public transportation and alternative fuels to spectators during Games time and afterwards.

Task	Responsibility	Schedule
Develop Games Time Air Quality Plan (first ever for Olympic Games) addressing transportation impacts, mitigation, and programs to improve air quality. Ultimate goal of realizing net decrease of pollution levels in SLC as a result of hosting Games.	UDEQ; US EPA Region 8; UEPHA; SLOC	completed
Olympic Cleaner and Greener – program to estimate emissions to be generated by the Games; then secure emission credits to 'off-set' the impact. Retire emission credits in the name of the XIX Winter Olympic Games.	Leonardo Academy; EPM	Kickoff anticipated Fall 2000
Encourage public transportation.	TF, UTA, EF	ongoing
Showcase alternative fuel use.	TF, EF, Clean Cities	ongoing

Objective: Urban forestry is the cornerstone for SLOC's environmental community outreach programs. Much of Utah, including Salt Lake City, is an arid, desert climate. The benefits of increasing urban tree cover include improving air quality, reducing soil erosion, and improving the ability to store water. SLOC's goal is to plant 100,000 trees by Games time throughout Utah and to advocate the benefits of urban forestry on a national and international platform.

Targets: Improve Air Quality. Plant 100,000 Trees.

Task	Responsibility	Schedule
CoolSpaces 2002 – Program delineates urban 'hot spots' in Salt Lake Valley. The data will be used to identify hot areas in which to plant trees.	EPC	ongoing
Plant an Olympic Family Tree – Program promotes tree planting in Utah by providing discount on purchases.	EPC, EPM	Annually, each fall until Games time
Capitol Tree Program – assist in reforestation of Capitol grounds damaged during 1999 tornado.	EPC	ongoing
Olympic Venue Tree Program – provide trees and shrubs for UOP, UOO, and Soldier Hollow venue aesthetics and reclamation efforts after the Games.	EPM, EPC	ongoing
PlantIt Green! The Global Tree Race – program promotes tree planting on an international scale.	EPM	10/2000 kick-off

Policy: Support programs to educate the public in environmental issues and raise the general consciousness of Utahns and world guests in the importance of protecting and preserving the environment.

Objective: Develop environmental education programs that target children, businesses, and communities locally, nationally, and internationally.

Target: Develop at least one program to hit each of the target groups listed above.

Task	Responsibility	Schedule
Tree-cology Program - an education program targeting third grade school children in Utah on the importance of trees.	EPC	Annually-each fall
EcoWorks 2002 Program - encourages hotels and restaurants to adopt practices and products that improve the environment and deliver financial savings for participants.	EPM	Seminar-5/2000
Bill Nye the Science Guy Videos – an environmental education program for school children K-12. Will be available nationally and internationally via www.saltlake2002.com.	EPC	Distribution 9/2001
Natural inquirer – Contribute environmental articles to this USDA Forest Service publication delivered to school children throughout intermountain west.	EPC	Next distribution 12/2000
Environmental Education Summit - Assist educators in development of environmental education initiatives.	EPM	Seminar-11/1998
Spirit of the Land Awards - Encourage schools, businesses, and community to implement environmental education projects.	EPC	Annual awards presented on Earth Day
SimOlympics – produce an on-line educational teaching aide using environmental concepts while building Olympic venues.	EPC	ongoing

ECM – Environmental Compliance Manager
EF – Environment Function Staff
EO – Event Operations Staff
EPC – Environmental Program Coordinator
EPM – Environmental Program Manager
FS – Food Service Staff
IT – Information Technology Staff
SF – Sport Function Staff
TF – Transportation Function Staff
UDOT – Utah Department of Transportation
UTA – Utah Transit Authority
VD – Venue Development
VS – Volunteer Services

Appendix 2
SLOC Environmental Incident Checklist and Reporting Form

SLOC Environmental Incident Checklist and Reporting Form

This form is to be used by SLOC staff, contractors, and volunteers as a checklist to orally report environmental incidents (e.g., accidental spill of hazardous materials, non-compliance situation, any other threat to the environment, or possible violation) and to prepare a written follow-up report. The oral report shall be immediately made to Diane Conrad at 801-212-2160, or other members of SLOC's Environment Department who can be reached through Sharka Vokel at 801-212-2051. The follow-up report shall be faxed to Diane Conrad at 801-212-2644.

This form is posted on SLOC Information Network (Policies & Procedures/Environment/Forms).

Date of Incident	Time of Incident
Location of Incident	
Nature of Incident	
Emergency Response Taken_____	
Governmental Personnel Involved/Notified (include date/time/method of communication)	
Persons Injured (names and phone numbers)_____	
Persons Involved/Witnesses (names and phone numbers)_____	
Hazardous Materials Involved (type and quantity)_____	
Known or Suspected Impacts to Environment_____	
Known or Suspected Causative Factors (e.g., unauthorized activity; improper equipment; improper materials handling; improper storage of material; improper use of vehicle; intentional conduct)_____ _____	
Describe Weather Conditions (wind direction, cloud cover, precipitation, temperature)	
What remedial actions have been or will be taken to ensure immediate and effective cleanup?_____	
What actions have been or will be taken to prevent a repeat of the incident? (e.g., repair, replace or modify equipment; develop or improve procedures; improve storage; improve inspection; retrain employees; improve design; other)_____ _____	
Name (print)	Signature
Title	Date

Appendix 3
SLOC Emergency Management Plan Components

SLOC EMERGENCY PREPAREDNESS AND RESPONSE PLAN COMPONENTS

Each Olympic venue and facility which could be subject to releases of hazardous materials or other emergencies posing a risk to workers, the public or the environment, shall be subject to the development of an emergency action plan and, if the facility/venue uses hazardous materials on-site, an emergency response plan which contain the following components:

Emergency Action

Emergency action plans for each employee location shall be prepared that have the following elements, at a minimum:

- Emergency escape procedures and emergency escape route assignments;
- Procedures to be followed by employees who remain to operate critical plant (facility/venue) operations before they evacuate;
- Procedures to account for all employees after emergency evacuation has been completed;
- Key organizational responsibilities, including emergency coordinator and rescue and medical duties for those employees who are to perform them;
- The preferred means of reporting fires and other emergencies; and
- Names or regular job titles of persons or departments who can be contacted for further information or explanation of duties under the plan.
- Location/ type of emergency response equipment.

Alarm System

Alarms at the facility/venue shall provide warning for necessary emergency action as called for in the emergency action plan. The alarm system shall be capable of being perceived above ambient noise or light levels by all employees in the affected portions of the workplace. The employee alarm shall be distinctive and recognizable as a signal to evacuate the work area or to perform actions designated under the emergency action plan. The alarm system should be periodically tested.

Evacuation Coordinators

Evacuation coordinators shall be designated and trained in sufficient numbers to assist in the safe and orderly evacuation of employees.

Written Plans

For all workplaces with more than 10 employees, the plan shall be written and made available for employee review.

Hazardous Materials Emergency Response

Facilities or venues whose employees may be exposed to accidental releases of hazardous materials at or around their workplace shall be required to maintain a hazardous materials emergency response plan in substantial compliance with the OSHA HAZWOPER standard at 29 CFR § 1910.120(q). The plan shall have the following components:

- Pre-emergency planning: the plan shall have a description of the actions taken to coordinate emergency response activities with government and appropriate non-government authorities involved in hazardous materials emergency response.

- Personnel roles, lines of authority, training and communication: the plan shall include a summary of the roles and responsibilities of management and emergency responders for the facility, their training in emergency response actions, and the methods of communication to be used during any emergency.

- Emergency recognition and prevention: the plan shall include an analysis of likely emergency release scenarios and measures in place to prevent them.

- Safe distances and places of refuge: the plan shall consider measures to be taken in case of an accidental release (such as shelter-in-place or evacuation) and determine where evacuations should take place or where evacuees should assemble.

- Site security and control: the plan shall address measures for controlling access to the site of any hazardous materials release, including the establishment of a perimeter (cold-zone), command center, and the exclusion of non-response personnel.

- Evacuation routes: to the extent not included in the emergency action plan, the plan shall detail the evacuation routes to be taken from any facility or venue involved in the accidental release of a hazardous material.

- Decontamination: the plan shall include specific measures, material, and equipment needs for the decontamination of emergency responders during a hazardous materials release.

- Emergency medical treatment and first aid: the plan shall outline provisions made for on-site emergency medical treatment (first aid and triage) and arrangements with medical facilities near the facility/venue for treatment of exposed individuals.

- Emergency alerting and response procedures: the plan shall describe the means used to alert employees and outside responders to an emergency at the facility/venue and the measures to be taken to ensure communication between responders.

- PPE and equipment inventory: the plan shall describe types and location of personal protective equipment and other emergency response equipment available to emergency responders at the facility/venue.

- Critique of response and follow-up: the plan shall provide a procedure for assessing the appropriateness of an emergency response and detailing specific changes to be made to the plan, procedures, or emergency response organization following a response, drill, or other exercise.

Contingency for Other Emergencies

To the extent practical, plans developed for response to other man-made and natural hazards shall be integrated into plans required by local, state, and federal agencies (such as those described above). The plans may include, but are not limited to:

- Weather-related emergencies;

- Earthquake hazards;

- Bomb threats and other terrorist activities;

- Power disruptions;

- Telecommunications failures; and

- Transportation emergencies.

Communication Procedures

Each plan shall include detailed procedures for communicating and coordinating emergency response activities with SLOC management, SLOC security, law enforcement and other governmental authorities, as appropriate. There should be provisions for mock drills and testing of emergency plans. The plan should have a section that discusses mitigating impacts and after incident reviews.

Appendix 4
SLOC Environmental Management Checklists (Levels 1 and Level 2 and 3)

ENVIRONMENTAL COMPLIANCE QUESTIONNAIRE
FOR SALT LAKE OLYMPIC WINTER GAMES'
LEVEL 1 VENUES AND ASSOCIATED FACILITIES

Please answer the following questions to the best of your ability. If the facility is not yet fully designed, answer the questions based on your understanding of the relevant plans for facility construction and operation. If the facility will be used for different purposes at different times that could affect the answers to these questions, please provide an explanation in your answer.

FACILITY NAME:_____

NAME OF INDIVIDUAL(S) RESPONDING:_____

TITLE:_____

TELEPHONE:_____

I. GENERAL

1. Please provide a general description of the facility, to include a description of any industrial processes. _____
_____
_____
_____

   a. What are the primary functions of the facility? _____
   _____
   _____

   b. How does it operate? _____
   _____

2. Has a determination been made regarding the environmental permits needed to *construct* the facility? If so, please identify. _____
_____
_____

3. If relevant, when is construction expected to commence (or indicate the date construction commenced and was completed)? _____
_____

4. Has a determination been made regarding the environmental permits needed to *operate* the facility? If so, please identify. _____
_____
_____

5. Who at the facility has the responsibility for overseeing any required environmental and land use permitting?_____
_____

6. What types of inspections have been made at the facility? _____
_____
_____

   a. Who performed these inspection(s)? _____
   _____
   _____

   b. What were the results of the inspection(s)? _____
   _____
   _____

   c. Are the results available? _____
   _____

7. Does the facility perform any routine inspections or monitoring, such as a daily walk-through? If so, who is responsible for this task and what does it entail?
_____
_____
_____

8. Has any type of environmental or safety audit ever been performed at the facility?
_____
_____
_____
_____

   a. Who performed the audit? What were the results of the audit? _____

_____

b. Are the results available? _____

9. Has the facility ever been cited for any health, safety or environmental violations? If so, please describe. _____

_____

_____

a. Who issued the citation? _____

_____

b. How was it handled? What was the outcome? _____

_____

_____

c. Are the records available at the facility?_____

10. Have any complaints ever been made to management or regulatory authorities about health, safety or environmental issues at the facility? If so, please specify.

_____

_____

a. Who complained? What was the complaint about? _____

_____

_____

b. How was it resolved? What records are available? _____

_____

_____

11. Who at the facility is immediately responsible for permit/environmental compliance? _____

_____

12. Are there any environmental policies or practices imposed on contractors working at the facility? _____

_____

13. How are documents handled at the facility? Is there a centralized document management system? Is there a document retention policy? _____

_____

_____

14. Have any environmental compliance issues or incidents occurred at the facility that have not already been disclosed? If so, please describe. _____

_____

II. WATER

15. Is the facility or construction associated with the facility located in or around streams, dry drainages, wetlands, swamps, rivers, lakes or other waters (or potential waters)? If so, explain. _____

_____

16. Are there continuous or sporadic discharges of water (including wastewater or storm water) or fill material (e.g., dirt) from the facility or associated with the construction of the facility into waters or potential waters (including dry drainages)? If so, describe and indicate which, if any, of the above-referenced permits covers the discharge. _____

_____

_____

_____

17. Are there discharges of storm or process water from the facility or associated with the construction of the facility with the potential to move directly or indirectly into ground water? If so, describe and indicate which of the above-referenced permits covers the discharge. _____

_____

_____

_____

18. Are there any groundwater or monitoring wells or other ground borings on the property?_____

_____

19. Is vehicle washing and/or other equipment cleaning performed at the site? If so, please describe. How is this water handled? _____

_____

_____

20. Does the facility provide potable water? If so, where is the potable water obtained and where is it distributed (e.g., showers, drinking water fountains)? _____

_____

III. PUBLIC HEALTH AND SOLID AND HAZARDOUS WASTE

21. Does the facility discharge sewage or wastewater to a publicly owned treatment works ("POTW")? _____

    a. Are discharges to the municipal system subject to any pretreatment requirements or other limitations? If so, please describe._____

    _____

    _____

22. Are there any discharges to septic systems? _____

23. Will temporary sanitary facilities be used at the facility?

    _____

    a. Will additional hook-ups be made to sewer facilities? _____

    _____

    b. If not, where will sewage or wastewater be disposed of? _____

    _____

24. Where is solid waste (e.g., garbage) disposed of? _____

    _____

25. What other types of special management waste are generated at the facility during construction and operation (e.g., oil, spent batteries, construction debris, common household waste) and how will those wastes be managed?

    _____

    _____

    a. How are these wastes handled at the facility? How long are they stored on the property? _____

    _____

    _____

    b. What quantity of each waste type will be generated? How will the wastes be segregated and labeled? _____

    _____

    _____

    c. Where are these wastes disposed of? _____

    _____

    _____

d. Do these wastes qualify as hazardous wastes? Is the facility required to complete manifests for any of its wastes? _____

_____

_____

IV. MATERIAL STORAGE/SPILLS

26. What types and quantities of hazardous materials are stored on the property (e.g., refrigerant, petroleum products, antifreeze, cleaning solvents, rags contaminated with solvents etc.)? _____

_____

_____

a. Do any of these materials exceed Clean Air Act § 112(r) ("RMP) thresholds? (See Attachment 1) _____

_____

b. Do any of these materials exceed OSHA Process Safety Management ("PSM") 29 C.F.R. § 1910.119 thresholds? (See Attachment 2) _____

_____

c. Do any of these materials exceed EPCRA "Extremely Hazardous Substance" 40 C.F.R. Part 355 thresholds? (See Attachment 3) _____

_____

27. Describe how the material is stored (e.g., in drums) and how it is used (e.g., for the refrigeration system, parts cleaning, etc.). _____

_____

_____

a. Are hazardous materials labeled and kept separate from other materials?

_____

_____

b. Does the facility submit an inventory of its hazardous materials to local emergency planners? _____

_____

28. Describe the type of containment provided should a material leak during either storage or use. _____

_____

29. Describe the reporting and response plans for releases and/or spills at the facility.

_____

_____

a. Does the facility coordinate with fire officials and local emergency planners? If so, please describe. _____

_____

_____

b. Who is responsible for reporting and responding to releases and emergencies at the facility? _____

_____

_____

c. What type of training is provided regarding hazardous materials management and emergency response? _____

_____

30. Does the facility have aboveground or underground storage tanks? If so, what size are the tanks and what do they contain? Are these tanks registered with the State? _____

_____

_____

31. If the facility stores or uses oil or other petroleum products and the facility is located near waters or potential waters, is it covered by a Spill Prevention Control and Countermeasure (SPCC) plan? (Any facility with total petroleum product storage capacity in excess of 1,320 gallons for above ground or 40,000 gallons below ground if a release from the facility could reasonably be expected to cause substantial harm to the environment by discharging into or on the waters of the United States is covered. A potential release to storm sewer is often sufficient to trigger the SPCC requirement.) Is it covered by an Emergency Response Plan ("ERP") 40 C.F.R. § 112.20? If not, describe the total underground and aboveground petroleum storage capacity of oil or other petroleum products. If so, who prepared the SPCC and/or ERP plans and where are the plans kept? _____

_____

_____

32. Does the facility import any chemicals or purchase any materials directly from providers not located in the United States? _____

_____

33. What types and quantities of pesticides, herbicides and fertilizers are used at the facility? _____

_____

34. Does the facility release any chemicals into the environment through channels other than water discharges, waste disposal practices or air emissions described in this questionnaire? _____

_____

35. Have there been any releases or spills at the facility? If so, how were they handled/reported? Are spill reports available and maintained? _____

_____

36. Is there any PCB containing equipment at the facility such as capacitors or transformers? If so, please describe. _____

_____

37. Is there any asbestos or asbestos containing material at the facility? If so, please describe. _____

_____

V. AIR

38. What types and quantities of air emissions occur at the facility (e.g., fuel burning equipment such as boilers, equipment and/or process vents use of solvents, paints, miscellaneous chemical use)? _____

_____

39. Does the facility have intermittent sources of air emissions such as standby generators? _____

_____

40. If the facility is under construction, has a fugitive dust plan been drafted? If so, is it being implemented? _____

_____

41. Are parking structures associated with the facility? If so, how many vehicle spaces are provided? _____

VI. TRANSPORTATION

42. Are special access roads associated with the facility? If so, please describe._____

_____

43. How will the public access the facility during the 2002 Winter Olympic Games?

_____

44. Will parking be provided at the facility? _____

_____

45. Will the parking lots be paved or will portions be unpaved? _____

_____

46. If park and ride structures are planned, where will they be located? How many vehicle spaces will be provided? _____

_____

_____

47. Is the park and ride structure currently in place? _____

_____

48. If not, when is construction anticipated? _____

_____

49. Have any permits associated with construction of the park and ride structures been obtained? _____

50. Will the park and ride structure be permanent? _____

51. Will bus service be provided to the facility? _____

52. If so, by whom? Where will buses be parked and maintained? _____

_____

_____

53. Does operation or construction of the facility require the use of oversize or overweight vehicles? If so, please describe. _____

_____

_____

VII. WORKER HEALTH AND SAFETY

54. Are employees at the facility exposed to hazardous materials while performing their duties? Is there potential for exposure in an emergency situation? (This covers both physical hazards (such as flammability) and health hazards (such as irritation, lung damage, and cancer). Most chemicals used in the workplace have some hazard potential, and thus will be covered by the rule.) If so, are Material Safety Data Sheets ("MSDSs") available to employees? _____

_____

_____

55. Are significant levels of noise or dust ever generated at the facility?

_____

VIII. ENVIRONMENTAL MITIGATION/ENVIRONMENTAL LEGACY

56. Describe any planned or ongoing environmental mitigation projects at or associated with the facility (e.g., wetlands restoration). _____

_____

57. Is the environmental mitigation project part of a permit or any other requirement? Explain. _____

_____

IX. CONTINUING USE/CLOSURE

58. Will all aspects of the facility continue to be used after the 2002 Winter Olympic Games? _____

_____

59. If not, are any specific closure activities planned at the facility following the 2002 Winter Olympic Games? If so, explain. _____

_____

ENVIRONMENTAL COMPLIANCE QUESTIONNAIRE
FOR SALT LAKE OLYMPIC WINTER GAMES'
LEVEL 2 and LEVEL 3 VENUES AND ASSOCIATED FACILITIES

INFORMATION AND DOCUMENTATION TO PRODUCE PRIOR TO TEST EVENTS AND THE 2002 OLYMPIC AND PARALYMPIC WINTER GAMES

Environmental Training

- Please describe all environmental, health and safety training programs in place at the facility, and identify (by job title) the recipient of the training. Please provide a copy of the materials for these training programs.

Emergency Preparedness and Response

- Please provide a copy of the site's emergency preparedness, contingency or response plan(s) that will apply to site operations and activities during the test events and the Olympic and Paralympic Winter Games of 2002.

- Please provide a copy of any agreements with local emergency responders that will be in force during the test events and the Olympic and Paralympic Winter Games of 2002.

Environmental Permitting

- Please provide a copy of all permits and approvals for the site that will apply to operations and activities at the site during the test events and the Olympic and Paralympic Winter Games of 2002.

Environmental Controls and Procedures

- Please provide a copy of all documentation governing the operation and maintenance of pollution control and monitoring equipment to be used during the test events and the Olympic and Paralympic Winter Games of 2002, and for which SLOC personnel will have responsibility.

- Please provide a copy of any other documentation governing procedures to ensure the protection of the environment, workers and the public during the test events and the Olympic and Paralympic Winter Games of 2002, and for which SLOC personnel will have responsibility.

- Please list all sources of discharges, emissions, effluents, or other waste streams at the site and associated environmental controls.

QUESTIONNAIRE

Please answer the following questions to the best of your ability. If you would like further clarification on any of these questions, please call Mary Barraco at 212-3932.

FACILITY NAME:_____
NAME OF INDIVIDUAL(S) RESPONDING:_____
TITLE:_____
TELEPHONE:_____

I. GENERAL

1. Please provide a general description of the facility, to include description of any industrial processes operating on site. _____

   _____

   _____

   a. What are the primary functions of the facility? How does it operate?

      _____

      _____

2. Has a determination been made regarding the environmental permits needed to *operate* the facility, such as SPCC Plan; air emission permit; wastewater permit? If so, please identify. _____

   _____

3. Does the facility perform any routine inspections or monitoring, such as a daily walk-through? If so, who is responsible for this task and what does it entail?

   _____

   _____

4. Has any type of environmental or safety audit ever been performed at the facility? If so, are the results available? _____

   _____

5. Has the facility ever been cited for any health, safety or environmental violations? If so, please describe. _____

   _____

   _____

6. Who at the facility is immediately responsible for a) permit/environmental compliance and b) health and safety? _____

   _____

7. Describe any environmental or health and safety policies or practices imposed on contractors working at the facility? _____

_____

II. WATER

8. Is the facility located in or around streams, dry drainages, wetlands, swamps, rivers, lakes or other waters (or potential waters), or other environmentally sensitive areas? If so, explain. _____

_____

9. Are there continuous or sporadic discharges of water (including wastewater or storm water) from the facility into surface water, ground water or potential environmentally sensitive areas? If so, describe and indicate whether a permit covers the discharge. _____

_____

10. Are there any groundwater or monitoring wells or other ground borings on the property? If so, describe their purpose._____

_____

11. Does the facility provide potable water? If so, where is the potable water obtained and where is it distributed (e.g., showers, drinking water fountains)? _____

_____

III. PUBLIC HEALTH AND SOLID AND HAZARDOUS WASTE

12. Does the facility discharge sewage or wastewater to a publicly owned treatment works ("POTW") or to a septic system? _____

_____

a. Are discharges to the municipal system subject to any pretreatment requirements or other limitations? If so, please describe._____

_____

13. Where is solid waste (e.g., garbage) disposed of? _____

_____

14. What types of special management waste (e.g., oil, spent batteries) and hazardous waste (e.g., spent solvents) are generated at the facility during operation?_____

_____

_____

a. How are these wastes handled at the facility and where are they disposed?
_____
_____
_____

b. What is the facility's hazardous waste generator status? _____
_____

IV. MATERIAL STORAGE/SPILLS

13. Describe hazardous materials stored on the property (e.g., refrigerant, petroleum products, antifreeze, cleaning solvents, rags contaminated with solvents etc.), container type (e.g., drum, tank, UST), container capacity (specify units – gal or lb), and secondary containment (e.g., berm)?

Product/Use	**Container type**	**Container capacity**	**Secondary containment**
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

14. Do any of these materials exceed OSHA Process Safety Management ("PSM") 29 C.F.R. § 1910.119 thresholds or Clean Air Act § 112(r) ("RMP) thresholds?
_____
_____

15. Does the facility submit an inventory of its hazardous materials to local emergency planners? _____
_____

18. Describe the reporting (e.g., notification procedures) and response plans (e.g. coordination with fire dept., local emergency response planners) for releases and/or spills at the facility. _____
_____

a. Does the facility coordinate with fire officials and local emergency planners? If so, please describe. _____
_____

b. Who is responsible for reporting and responding to releases and emergencies at the facility? _____
_____

_____

19. Have there been any releases or spills at the facility that require on-going remediation_____

_____

20. Is there any PCB containing equipment at the facility such as capacitors or transformers? If so, please describe. Is it labeled? _____

_____

21. Is there any asbestos or asbestos containing material at the facility? If so, please describe. Is it marked? _____

_____

V. AIR

22. What types and quantities of air emissions occur at the facility (e.g., fuel burning equipment such as boilers, equipment and/or process vents use of solvents, paints, miscellaneous chemical use)? _____

_____

23. Does the facility have intermittent sources of air emissions such as standby generators? _____

_____

VI. WORKER HEALTH AND SAFETY

24. What types of training is provided regarding hazardous material management and emergency response?_____

_____

25. Are employees at the facility exposed or potentially exposed to hazardous materials while performing their duties or in an emergency situation? (Consider physical hazards (such as flammability) and health hazards (such as irritation, lung damage, and cancer). _____

_____

26. Are Material Safety Data Sheets (MSDSs) available to employees? Where? _____

Appendix 5
Environmental Indicators

ENVIRONMENTAL INDICATORS

Policy: Display environmental sensitivity in venue development and operations.

Objective: Venue Compliance - with all applicable Federal, State, and Local laws and regulations during design, construction, operations, and management.

Target: Zero violations of environmental regulatory requirements at SLOC controlled venues and facilities.

Indicators	Status/ Notes
Number of violations.	
Number of audits completed.	
Number of corrective action items communicated.	
Number of corrective action items resolved.	

Objective: Air Quality.

Target: Prevent Air Emissions.

Indicators	Status/ Notes
Local average air pollution concentration pre-Games vs. concentration during Games time.	
Emissions generated related to Games activities vs. emission credit reductions.	

Objective: Protect Wetlands, Fragile Habitat, and Other Sensitive Ecosystems.

Target: Minimize negative environmental impacts to ecosystem related to new construction.

Indicators	Status/ Notes
Acres of wetlands lost vs. acres reclaimed/created.	
List sites requiring revegetation and status/schedule.	
List sites requiring mitigation/ restoration and status/schedule.	Contractors currently building facilities at the following locations are operating under a Nationwide Permit: Soldier Hollow, UOP.
General Information/ Achievements: 1. Where practicable, SLOC's bid proposal included utilization of as many existing facilities and infrastructure as possible so as to avoid impacts from new construction. This goal has largely been achieved as few new facilities have been built to accommodate the 2002 Olympic Winter Games. 2. Based on concerns of public interest groups, SLOC agreed to avoid locating any venues in Big or Little Cottonwood Canyons in order to preserve the integrity of important and fragile watershed areas	

and ecosystems, despite the presence of existing world class ski resorts in these canyons just minutes from Salt Lake City.

3. After concerns were raised by a number of public interest groups, SLOC established a working group to reevaluate the desirability of relocating the cross-country and biathlon venue which was proposed to be located in the drainage of Little Dell Creek in the vicinity of Mountain Dell Golf Course. The working group consisted of a variety of stakeholder representatives and professionals who evaluated eleven other potential venues. As a result of this effort, SLOC dropped from consideration the Mountain Dell site and selected Soldier Hollow as the cross-country and biathlon venue based largely on environmental protection considerations

Objective: Resource Conservation and Management.

Targets: Zero waste. Develop plans and procedures to promote resource conservation and management in SLOC development and operations activities.

Indicators	Status/ Notes
Percent of packaging material, service products, etc. made from recycled materials	
Track environmentally friendly procurement practices/ projects with innovative environmental ideas or experiments – list examples	
Track energy conservation projects implemented. Quantify energy saving if possible.	
Track volume of waste generated during Games and disposition. Compare percent recycled to non-recycled.	
Track environmentally friendly chemical replacement/ usage.	

General Information/ Achievements:

1. Rock excavated from construction at Utah Olympic Park was used in the construction of retention walls at Soldier Hollow.
2. Utah Olympic Oval in Kearns, Utah, contains a unique cable stayed structure which allows it to use 1/3 less the regular steel required for a building its size. Due to its energy efficient design and construction, it was the first sporting facility to receive the prestigious LEED (Leadership in Energy and Environmental Design) "green building" rating by the United States Green Building Council

Objective: Water Quality.

Target: No degradation of water quality.

Indicators	Status/ Notes
Number of spills/ releases.	
On-going mitigation and contamination concentrations.	
Volume of soil impacted vs. remediated.	

Policy: Leave a Legacy of Environmental Enhancement and Improvement

Objective: Air Quality.

Targets: Zero Net Air Emissions during Games time. Encourage use of Olympic Transportation system, public transportation and promote traffic demand management strategies.

Indicators	Status/ Notes
Quantify mass transit ridership.	
Calculate emissions 'saved' through use of mass transit during Games.	
Calculate emissions 'saved' through use of alternative fuels.	
Track number of trees planted in all the various tree programs, by program.	

Policy: Support programs to educate the public in environmental issues and raise the general consciousness of Utahns and world guests in the importance of protecting and preserving the environment.

Objective: Develop environmental education programs that target children, businesses, and communities locally, nationally, and internationally.

Target: Develop at least one program to hit each of the target groups listed above.

Indicators	Status/ Notes
Number of third graders reached; percent of UT third graders reached; number of trees planted.	
Track number/percent of hotels that participate in EcoWorks 2002 program and resources saved.	
Number of videos produced, topics covered. Distribution – locally, nationally, internationally.	

Appendix 6
Environmental Management System Checklist

SLOC ENVIRONMENTAL MANAGEMENT SYSTEM CHECKLIST

Environmental Training

- Do all personnel, whose work may create significant impacts upon the environment or risk to worker safety or public health, receive appropriate training and re-training?

- Does the environmental training program include new employee training as well as on-going employee refresher training?

- Does the environmental training program instruct employees in: (1) the requirements of SLOC's environmental management system, (2) the significant impacts of the site's activities and the benefits of improved personal environmental performance, (3) the employee's responsibilities for complying with the environmental policy statement and the environmental management system procedures, including emergency response requirements, and (4) the potential consequences of an employee's noncompliance?

- Describe all such training programs and identify (by employee name or position) the recipients of the training.

- Are employee training records maintained?

Environmental Permitting

- Has the site conducted a review to determine that required environmental permits and approvals have been obtained for each activity?

- Has the site compiled a "permit book" or other conveniently located documentation for easy accessibility of all environmental permits and approvals?

Environmental Controls and Procedures

- Has the site identified all sources of discharges, emissions and effluents to ensure that appropriate environmental controls exist to minimize environmental impacts and to comply with applicable legal requirements?

- Describe all sources of discharges, emissions and effluents at the site and their associated environmental controls.

- Has the site developed a maintenance program and schedule to ensure proper calibration and operation of environmental control equipment?

- Has the site management developed site-specific procedures governing environmental compliance matters and environmental management programs with respect to the following:

-- Air pollution control
-- Water pollution control
-- Storm water management
-- Hazardous materials management, including pollution prevention and recycling
-- Solid and hazardous waste management
-- Spill prevention, control and counter-measures
-- Reclamation and closure
-- Emergency response
-- Oversight of contractors to monitor contractor compliance with environmental requirements
-- Natural resources management (e.g. land management, protection of wildlife, wetlands, and archeological resources)
-- Materials, water and energy conservation programs
-- Regulatory agency interaction

Environmental Auditing / Inspections / Monitoring / Measurement

- Has the site established procedures for conducting routine environmental audits and inspections by site personnel? If so, explain nature, purpose and frequency of internal audits and inspections.

- Has the site established and maintained procedures to monitor and inspect the work areas of employees and contractors to ensure compliance with environmental laws and company policies?

- Does the site have other procedures for monitoring and measuring environmental compliance, environmental impacts resulting from the site's operations, and measures to reduce such impacts?

Communication

- Has the site established and implemented procedures and policies for internal communication (oral and written) between site operations personnel and site management with respect to routine environmental matters and environmental incidents?

- Has the site established and implemented procedures and policies for communication (oral and written) between site management and SLOC management with respect to routine environmental matters and environmental incidents?

- Has the site established and implemented procedures and policies for communication (oral and written) between the site and interested members of the community (through SLOC public relations personnel) with respect to routine environmental matters and environmental incidents?

- Has the site established and implemented procedures and policies for obtaining information from employees and contractors relating to conditions or activities believed to be in violation of applicable law, SLOC policies or which pose a threat to worker / public health and safety? If so describe and provide related written materials.

Environmental Accountability/Responsibility

- Does the site have a clearly defined organization structure that sets forth the environmental responsibilities of key individuals? If so, describe.

- Do employees have job descriptions containing environmental management responsibilities?

- Is environmental compliance factored into employee performance evaluations?

- Do personnel responsible for environmental management and compliance have adequate resources to perform their responsibilities?

- Has site management communicated to employees their expectations regarding environmental compliance?

- Has site management circulated to site personnel SLOC's written policies governing environmental compliance matters and environmental management programs?

Non-Compliance and Corrective Action

- Has the site established procedures to identify non-compliance and to implement corrective action once non-compliance is identified?

- Has the site established procedures to report to SLOC management environmental non-compliance conditions?

- Has the site established procedures to document corrective actions taken to address non-compliance conditions?

Environmental Documentation and Record Keeping

- Has the site established and maintained, in paper or electronic form, documentation memorializing the core elements of site-specific environmental management practices and procedures?

- Has the site established procedures to ensure that documents required by law and company policies can be:

  -- Located and made available to necessary personnel.

  -- Periodically reviewed and revised.

  -- Retained for those documents which have legal and/or knowledge preservation value.

  -- Removed when the documents are obsolete or no longer are applicable.

- Has the site established a document retention policy?

Emergency Preparedness and Response

- Has the site established procedures to identify the potential for and respond to environmental incidents, accidental and intentional releases, and other emergency situations, and for preventing and mitigating impacts related to such incidents and emergencies?

- Has the site established procedures to report to government regulators environmental incidents, accidental and intentional releases, and other emergency situations?

- Has the site established procedures to report to SLOC management environmental incidents, accidental and intentional releases, and other emergency situations?

Waste Reduction/Minimization

- Has the site established procedures to implement SLOC's waste reduction and minimization program?

- Has the site established procedures to monitor and document, both qualitatively and quantitatively, the site's efforts to reduce and minimize waste?

Security

- Has the site established procedures to report to SLOC security personnel environmental incidents, accidental and intentional releases, and other emergency situations?

- Has the site established procedures to coordinate with SLOC security personnel actions taken by site personnel during environmental incidents, accidental and intentional releases, and other emergency situations?

Management Review

- Has the site established procedures for periodically reviewing the adequacy of the site's environmental management program?

- Has the site established procedures for periodically improving and updating the adequacy of the site's environmental management program?

- Has the site established procedures for documenting improvements and updates to the site's environmental management program?

Appendix B
Potentially Applicable Laws & Regulations

POTENTIAL ENVIRONMENTAL PERMIT AND PLAN REQUIREMENTS FOR CONSTRUCTION AND OPERATION

Permit Type	Permittee/Plan Responsibility	Issuing Agency	Description of Permit or Plan	Time Required to Prepare for Permit	Major Commitments	Comments
Construction Noise Exemption	SLOC Area/Site Manager, Construction Manager (CM)	Local Health Department	Allow construction work after hours (at night)	1 week	-Altered hours of construction -May require monitoring	
CWA Section 404/ Nationwide Permits (apply to variety of activities in wetlands such as road crossings and work in headwaters)	SLOC Area/Site Manager, Venue Owner, UDOT	COE/UDEQ	Wetlands/Stream Alteration joint state/federal permit. If the work qualifies for a state stream alteration, no federal approval or permit is required.	90 days for NWPs,; 10 days for state permit	-Required for disturbance in jurisdictional water (including wetland areas) or work in a stream. -Mitigation plans sometimes required to compensate for wetlands impacts. -Engineering plans for stream alterations.	The determination of what constitutes "jurisdictional waters" often involves complex technical and legal issues; accordingly carefully coordination with legal counsel and technical consultants is advised; the interpretation and administration of CWA § 404 is currently in a state of flux
Emergency Planning and Community Right-to-Know Act (SARA Title III)	Venue Owner	EPA/LEPC/ Fire Dept.	Required for use or storage of extremely hazardous substance above threshold amounts (i.e. ammonia > 500 lbs). 40 CFR Pt. 355 App. A (list of extremely hazardous substances)	Due Annually by March 1st	-File annual report and hazardous chemical inventory with Utah DERR, LEPC and local fire dept; must notify the same of changes in operation or inventory. - File Material Safety Data Sheets ("MSDSs") above threshold quantities to the same. 40 CFR § 370.21	Likely applies only to UOP and UOO

Permit Type	Permittee/Plan Responsibility	Issuing Agency	Description of Permit or Plan	Time Required to Prepare for Permit	Major Commitments	Comments
OSHA Hazard Communication and EPCRA	SLOC Area/Site Manager, Logistics, Motorpool, Venue Owner, Construction Companies	OSHA/EPA	Requirement to train all employees potentially exposed to haz materials.	Annually	Need to provide workers with: --Inventory of haz materials on the work site -Access to MSDS -Label chemical hazards -Train workers and document training -Need to submit MSDS for haz material above threshold quantities to LEPC, CEM and local fire dept	
Hazardous Materials Registration	SLOC Venue Logistics Manager, Venue Owner, CM, UDOT	Local Fire Department	Allows for use and storage of hazardous materials	2 weeks	-File forms with local Fire Dept -Comply with applicable Fire Code requirements for storage	
Conditionally Exempt Small Quantity Generator (CESQG)	SLOC Work, CM	Self Determination	Allows disposal or recycling of small quantities of hazardous waste.	N/A	-No regulatory notification required however must know your generator status. -Facility generates < 220 lbs (~1/2 of a 55-gal drum) of haz waste in a month; < 2.2 lbs (~1qt) of acute haz waste in a month; > 2,200 lbs (5 55-gal drums) of haz waste at any one time -Must manifest haz wastes, keep copies for 3 yrs -Dispose within 90 days	-If > 11,000 lbs of universal waste is generated, must notify DEQ

Permit Type	Permittee/Plan Responsibility	Issuing Agency	Description of Permit or Plan	Time Required to Prepare for Permit	Major Commitments	Comments
UPDES & Storm Water Pollution Prevention Plan (SWPP)	SLOC Environment, UDOT, CM SLOC Area/Site Manager- Amendment to existing permit as consequence of buildout	UDEQ, Division of Water Quality	State permit allows for discharges of storm water from construction sites > 5acres. Develop internal plan for site < 5 acres.	1 week	-State permit requires development of the plan then submittal of NOI and $100 check for 1 yr coverage -Installation and maintenance of BMP's to control erosion -Stabilization and reclamation of construction areas -Plan maintained on site for 3 years after stabilization completed -Bi-weekly or monthly Inspections -Inspection required within 24 hrs after storm event >0.5"	-Need internal storm water plans for site of less than 5 acres -SLOC Environment Department has templates for both state and internal plans.
Air Emissions- Fuel burning equipment	SLOC Area/Site Manager, Venue Owner	UDEQ, Division of Air Quality	Allows operation of fuel burning equipment (natural gas or liquefied petroleum gas) of greater than 5 million BTU/hr	12 weeks	-Recordkeeping requirements	Note that DAQ construes this exemption to apply to the <u>total</u> heat input value of all fuel burning equipment at a facility
Air Emissions- Comfort heating equipment, including boilers, water heaters, air heaters and steam generators	Venue Owner	UDEQ, Division of Air Quality	Allows operation of a unit that has a rated capacity of greater than 1 million BTU/hr if fueled only by fuel oil numbers 1-6	12 weeks	-Recordkeeping requirements	
Air Emissions- refueling operations	SLOC Logistics, Motorpool, UDOT, UTA, CM	UDEQ, Division of Air Quality	Allows operation of a unit that has the potential to generate air emissions	12 weeks	-Recordkeeping requirements	For refueling operations located in Davis and Salt Lake Counties, Stage II vapor recovery systems are required.

Permit Type	Permittee/Plan Responsibility	Issuing Agency	Description of Permit or Plan	Time Required to Prepare for Permit	Major Commitments	Comments
Air Emissions – Other Small Sources	Venue Owner	UDEQ, Division of Air Quality	No permit is required for operation of a unit that has actual emissions less than: (a) 5 tpy/contaminant of any of the following: SO2, CO, NOx, PM10, O3, VOCs; (b) 500 lb/yr any HAP and less than 2000 lb/yr of any combo of HAPs; (c) 500 lb/yr any other contaminant not listed in (a) or (b) and less than 2000 lb/yr any combo of contaminants not listed in (a) or (b).	12 weeks	-Must register with DAQ -Recordkeeping requirements	Note that emissions triggering permit requirements for "small sources" are measured in actual emissions, not potential emissions
Air Emissions-Parking	UDOT, UTA SLOC Environment for Soldier Hollow	UDEQ, Division of Air Quality	Permit required for new parking areas with capacity of 600 vehicle or more or addition of 350 vehicles or more	12 weeks	-Requires demonstration of Best Available Control Technology (BACT) during design of lot	
Dust Control Plan	CM	UDEQ, Division of Air Quality	No permit issued. Plan in effect for term of project	1 week	-Must submit the plan to DEQ AQ Bureau no later than 30 days after source initiated -Opacity caused by fugitive dust shall not exceed 10% at property boundary and 20% on site	-Required by regulation for activities or equipment that has the potential to produce fugitive dust or disturb ¼ acres or more along the Wasatch Front. Recommended for other areas as well -SLOC Environment Department has template
Fuel Storage	SLOC Logistics, Motorpool, UDOT, UTA, CM	Local Fire Department	Allows storage and dispensing of fuels.	4 weeks	Recordkeeping, monitoring	Routinely evaluated as part of building plan approval by Fire Marshall.

Permit Type	Permittee/Plan Responsibility	Issuing Agency	Description of Permit or Plan	Time Required to Prepare for Permit	Major Commitments	Comments
Spill Prevention, Containment and Countermeasure Plan	SLOC Logistics, Venue Owner, CM	UDEQ	Provides for spill prevention, containment and clean-up of petroleum products	4 weeks	-Required if facility stores petroleum products >1,320 gal total or >660 gal for an individual container for above ground tanks or 40,000 gal below ground and could potentially discharge to water -Plan must be updated and certified by professional engineer every three years -Plan has specific requirements per regulations (40 CFR 112)	- SLOC Environment Department developing template
CAA § 112(r) – Risk Management Requirements	Venue Owner/Operator	EPA	Clean Air Act § 112(r) requires all facilities using "regulated substances" at or above threshold quantities set forth at 40 CFR § 68.130 to develop a risk management program.	90 days	The RMP includes an analysis of potential offsite consequences of an accidental release, a five-year accident history, a release prevention program and an emergency response program.	This requirement applies only to UOP.
OSHA Process Safety Management ("PSM")	Venue Owner	OSHA/ UOSH	PSM requires facilities using a threshold amount of "highly hazardous chemicals" to prepare an internal program which prevents or minimizes the consequences of catastrophic releases of toxic, reactive, flammable, or explosive chemicals. 29 CFR § 1910.119.	N/A	- PSM documentation must be made available to OSHA upon inspection but is not submitted for approval -This includes a process hazard analysis, training, start up and shutdown protocols, emergency response procedures, inspections and standard operating procedures for processes using highly hazardous substances.	

Permit Type	Permittee/Plan Responsibility	Issuing Agency	Description of Permit or Plan	Time Required to Prepare for Permit	Major Commitments	Comments
Underground Storage Tank (UST) Registration	Venue Owner	UDEQ	Registers existing UST's in use or closed after 1974 and new installation or removal	Should already be permitted. Annual renewal.	-Must notify UDEQ if owner/operator changes -Annual fee required -Petroleum storage tanks must have a certificate of compliance which includes a tank tightness test -Must notify UDEQ of any changes to tank or piping system	
Used Oil Generator	SLOC Venue Logistics Managers, Motorpool, Venue Owner	UDEQ	No permit or plan required however, standards apply. Good idea to have a written protocol for handling and disposal of used oil.	N/A	-Controls to lessen the chance of spills, containers must be in good condition -Records that used oil is legitimately recycled -Containers and piping marked with "USED OIL" -Facility has copy of used oil hauler's EPA ID#	
Emergency Response Plan	Venue Owner, SLOC Risk/CIMS	Each Facility	Emergency response for facility during normal operations and Games times	Annual review	-Coordination with local emergency responders	The obligation to prepare an emergency response plan arises under several laws, including OSHA

ANY QUESTIONS CALL MARY BARRACO, SLOC VENUES COMPLIANCE MANAGER AT (801) 212-3932 OR (801) 215-5007 CELL

Appendix C
Salt Lake Organizing Committee Policy & Procedures, March 2001

SALT LAKE ORGANIZING COMMITTEE

ENVIRONMENTAL POLICY

AND PROCEDURES

March 2001

DISCLAIMER

Contracts between the Salt Lake Organizing Committee (SLOC) and its contractors, vendors and suppliers (contractors) impose on the contractors the exclusive responsibility for satisfying requirements arising form project activities under federal, state and local laws and regulations relating to environmental protection and worker safety. The Environmental Procedures contained in this Addendum are only advisory. The mandatory requirements imposed on the contractor are set forth in the contractor's contract with SLOC and in the law. If a conflict arises between any of the Environmental Procedures and the contract (or applicable law), the provisions of the contract (and the law) are the controlling provisions. Contractors should seek assistance from competent legal counsel and environmental consultants in complying with environmental and worker safety requirements. The contractor should also consult the regulatory agencies.

SLOC ENVIRONMENTAL POLICY

This policy applies to all SLOC employees; all SLOC-related venues, functions, and operations; contractors; and suppliers of goods and services.

It is SLOC's policy to achieve a high standard of environmental protection and enhancement in every aspect of planning for and staging the Winter Olympic Games of 2002 and the Paralympic Winter Games. SLOC's approach to environmental management seeks continuous improvement by integrating an internal review process and the concerns of both regulatory agencies and citizen-based environmental organizations into this Environmental Management System.

Specifically, it is SLOC's policy to:

- Comply with all applicable Federal, State and Local laws and regulations.
- Adopt appropriate operational practices and training programs to ensure employee awareness of their environmental management responsibilities.
- Factor environmental considerations into procurement practices whenever environmentally and economically practical.
- Support programs to educate the public in environmental issues and raise the general consciousness of Utahns and world guests in the importance of protecting and preserving the environment.
- Leave a legacy of environmental enhancement and improvement.

In concert with this policy, in 1995, SLOC's Board of Trustees approved a detailed Environmental Platform outlining how SLOC will conduct business relative to the environment to ensure a lasting Olympic environmental legacy for years to come. The complete text of the SLOC Environmental Platform is available by calling (801) 212-2051. The following summarizes the 12-point Environmental Platform:

1. **Management.** To integrate environmental sensitivity into every aspect of the games in its administration through budgetary, organizational and procedural means.

2. **Environmental design and construction.** To ensure that design and use of Olympic facilities adequately assess and minimize environmental impacts and complement natural surroundings.

3. **Temporary facilities.** To ensure that temporary facilities can be reused in a manner that benefits the entire community. Also, to restore any natural areas that are impacted by the installation and removal of such facilities.

4. **Energy and water conservation.** To build facilities and adopt practices which conserve our valuable natural resources.

5. **Materials management.** To responsibly manage material selection, use, consumption and disposition to minimize environmental impact.

6. **Official suppliers, contractors, and sponsors.** To work with suppliers, contractors, and sponsors to ensure that products and the methods in which they are delivered are environmentally responsible.

7. **Cultural events and ceremonies.** To use high profile events to further environmental education and to serve as a model for environmentally responsible event management.

8. **Sports and sports organizations.** To encourage the Olympic teams and sports organizations to develop environmental messages and profiles that are suited to the sport itself and to the Olympic spirit.

9. **Environmental education.** To realize the Olympics as a unique vehicle to educate both children and adults regarding environmental issues.

10. **Transportation.** To minimize transportation impacts, their related environmental problems, encourage mass transit and other environmentally responsible modes of transportation.

11. **Lodging and food services.** To provide environmentally sensitive lodging and food services for our visitors.

12. **Environmental monitoring.** To monitor the progress of SLOC in meeting it's environmental goals.

EMERGENCY RESPONSE

(TO BE POSTED IN A PROMINENT LOCATION)

- STAY CALM AND ASSESS THE SITUATION
- FOR EVACUATION: FOLLOW EMERGENCY ESCAPE PROCEDURES AND ESCAPE ROUTES
- ACCOUNT FOR ALL EMPLOYEES
- EMERGENCY CONTACTS:

1. SUPERVISOR Name:_____ Phone:_____
2. EMERGENCY COORDINATOR Name:_____ Phone:_____
3. FIRE AND RESCUE:_____
4. SLOC CONTACTS: Diane Conrad 212-2160 244-2160 (cell) 715-8001 (home)
   Mary Barraco 212-3932 244-3932 (cell) 816-1011 (home)

- FOR FIRST AID: DETERMINE NEED FOR EQUIPMENT AND TOOLS
- ADMINISTER FIRST AID
- SEND FOR HELP
- CALL EMERGENCY CONTACTS IF INJURY IS SERIOUS
- SUPERVISOR BEGINS ACCIDENT INVESTIGATION
- EMPLOYEE OR SUPERVISOR FILLS OUT ACCIDENT REPORT BY END OF SHIFT
- DRUG AND ALCOHOL TESTS MAY BE REQUIRED OF AN ACCIDENT OR INJURY VICTIM OR OTHER PERSONS INVOLVED IN THE INCIDENT

SPILL REPORTING AND ENVIRONMENTAL INCIDENT NOTIFICATION

- **Spill**: Any unauthorized discharge of oil or other substance which may cause pollution of land, air or water or may be harmful to human health.
- **Environmental Incident**: A potential non-compliance incident, any other threat to the environment or a possible violation. Also any incident that could negatively impact Contractor or SLOC's reputation.
- Use SLOC Environmental Incident Report Form for all spills greater than 1 gallon and for any environmental incident. Complete the form within 24 hours and FAX to 801-212-2644 to the attention of "Mary Barraco- Environmental Department".
- Spills of a substance that could pollute waters of the state are to be reported to the Utah Division of Water Quality (DWQ) immediately (801-538-6146 or 801-536-4123 off hours) (Utah Code 19-5-114). Contractor will coordinate with SLOC before reporting <u>any</u> spills to DEQ. SLOC environmental contacts:

Diane Conrad:	212-2160	244-2160 (cell)	715-8001 (home)
Mary Barraco:	212-3932	215-5007 (cell)	816-1011 (home)

- Hydrocarbon spills > 25 gallons or spills that cause a sheen on surface waters must be reported DEQ within 24 hours (801-536-4123) and National Response Center immediately (800-424-8802) (40 CFR 280.53 and 40 CFR 110).
- Used oil spills > 25 gallons or potentially threaten human health or the environment must be reported to DEQ immediately (801-536-4123) (R315-15-9).
- Store all hydrocarbon products and chemicals on secondary containment (HDPE liner, plastic spill trays) that can contain 110% of the largest container. Make sure that materials stored together are compatible.
- Some spills are required by law to be reported to state and federal agencies. Contractor, in coordination with SLOC, will be responsible for agency notifications.

SLOC Environmental Incident

Checklist and Reporting Form

This form is to be used by SLOC staff, contractors, and volunteers as a checklist to orally report environmental incidents (e.g., accidental spill of petroleum products or hazardous materials, non-compliance situation, any other threat to the environment, or possible violation) and to prepare a written follow-up report. The oral report shall be immediately made to Diane Conrad at 801-212-2160 or Mary Barraco at 801-212-3932, or other members of SLOC's Environment Department who can be reached through Sharka Vokel at 801-212-2051. The follow-up report shall be faxed to Mary Barraco at 801-212-2644.

This form is posted on SLOC Information Network (Policies & Procedures/Environment/Forms).

Date of Incident	Time of Incident
Location of Incident	
Nature of Incident	
Emergency Response Taken_____ _____	
Governmental Personnel Involved/Notified (include date/time/method of communication)	
Persons Injured (names and phone numbers)_____	
Persons Involved/Witnesses (names and phone numbers)_____	
Hazardous Materials Involved (type and quantity)_____	
Known or Suspected Impacts to Environment_____	
Known or Suspected Causative Factors (e.g., unauthorized activity; improper equipment; improper materials handling; improper storage of material; improper use of vehicle; intentional conduct)_____ _____	
Describe Weather Conditions (wind direction, cloud cover, precipitation, temperature)	
What remedial actions have been or will be taken to ensure immediate and effective cleanup?_____	
What actions have been or will be taken to prevent a repeat of the incident? (e.g., repair, replace or modify equipment; develop or improve procedures; improve storage; improve inspection; retrain employees; improve design; other)_____ _____ _____	
Name (print)	Signature
Title	Date

HAZARDOUS MATERIALS AND WASTES

- Workers "exposed"[1] to hazardous materials must be provided information and training prior to their initial assignment to work with hazardous materials and their training must be updated whenever any of the hazards change (per OSHA regulation 29 CFR 1910.120).

- Strive to use products with no hazardous characteristics (ignitability, corrosivity, reactivity, toxicity) or listed hazardous substances (40 CFR 261.31-33).

- Typical hazardous wastes include paints, paint thinners, solvents, non-empty aerosol cans and used filters. Such wastes should be disposed of properly and never poured on the ground, down sewers or down storm drains. Generators of less than 220 lbs per month of hazardous waste are allowed to dispose of such wastes at the Salt Lake Valley Solid Waste Management Facility, 6030 West 1300 South, Salt Lake City, Utah. For more information, call 541-4078. "Large quantity generators" (over 220 lbs per month) must obtain an EPA identification number and ship the waste using a licensed hazardous waste transporter for disposal at a permitted hazardous waste facility.

- The person generating a solid waste is required to determine if the waste is hazardous.

- Never mix a hazardous waste with another product.

- Any questions on the handling or disposal of hazardous materials or wastes should be directed to your supervisor.

[1] "Exposed" under the rule means "an employee is subjected to a hazardous chemical in the course of employment through any route of entry (inhalation, ingestion, skin contact or absorption, etc.) and includes potential (e.g. accidental or possible) exposure."

USED OIL, ANTIFREEZE AND UNIVERSAL WASTES

Used Oil and Antifreeze

- Used oil or antifreeze shall be collected in separate 55-gallon drums or other appropriate containers and labeled "USED OIL" or "USED ANTIFREEZE".

- Drums should be stored on secondary containment (HDPE liner or plastic trays) capable of containing 110% of the largest container.

- Recycle all used oil or antifreeze with a reputable dealer within one year of generation.

- Never mix solvents or other products with used antifreeze or oil.

- Generator is responsible for determining that used oil or antifreeze is non-hazardous. Keep copy of analysis the recycler performs on site.

- Used oil can not be applied to the land for dust suppression.

Universal Wastes

- Typical universal wastes include:
    1. Old lead acid and nickel cadmium batteries
    2. Burnt out fluorescent, mercury vapor and metal halide bulbs
    3. Mercury containing thermostats
    4. Certain recalled pesticides

- Universal wastes are to be handled as follows:
    1. Collected into separate containers and labeled appropriately ("UNIVERAL WASTE BATTERIES FOR RECYCLING"; "UNIVERSAL WASTE FOR RECYCLING- HG CONTAINING BULBS")
    2. Labeled with an accumulation start date
    3. Not accumulated or stored for more than one year
    4. Recycle such wastes at the Salt Lake Valley Solid Waste Management Facility, 6030 West 1300 South, Salt Lake City, Utah. For more information, call 541-4078.

- *Batteries*: Return to vendors for recycling, send to facilities for metals recovery, or send for recycling at Salt Lake Valley Solid Waste Management Facility. Leaving cell caps off batteries to evaporate electrolyte is considered treatment and requires a permit. The electrolyte can be removed from the cells but the owner must determine if it is hazardous and manage accordingly. Lead acid batteries must be managed according to 40 CFR 266.80 (R315-14-6).

- *Lighting fixtures and bulbs*: Send for recycling at Salt Lake Valley Solid Waste Management Facility, or to a mercury recycling facility. Ballasts used in fluorescent light fixtures can contain PCBs. Unless the ballast is marked as not containing PCBs, it should be collected in a labeled container and shipped for disposal as a PCB item. Ballasts that are marked as being free of PCBs can be discarded as a regular solid waste.

PETROLEUM STORAGE AND FUELING

- No smoking with 50 feet of petroleum storage or fueling areas.

- Tanks must be clearly marked with contents and "NO SMOKING" signs. A 40- B rated fire extinguisher is required within 50 feet of the tank.

- Location and types of tanks must comply with requirements in Uniform Fire Code.

- Facilities that use or store petroleum or fuel oil in tanks that could discharge into waters of the U.S. are required to have a written Spill Prevention, Containment and Countermeasure plan if the tanks are:
  - underground tanks in excess of 42,000 gallons or;
  - aboveground ground tanks in excess of 660 gallons for individual tanks or cumulative storage of 1,320 gallons (40 CFR 112).

- Secondary containment should be provided for fueling areas that receive a lot of traffic or are located near surface water, storm drains or in areas of shallow ground water.

- Never leave vehicles or equipment unattended during fueling.

NON-HAZARDOUS WASTE MANAGEMENT

- Goal of Salt Lake 2002 Olympic Winter Games is to recycle/compost all waste generated. Discard waste in appropriately labeled bins for recycling.
- Non-hazardous waste includes any solid, semi-solid or liquid that is discarded or thrown away and does not meet the legal definition of a hazardous waste.
- REDUCE, REUSE, RECYCLE
- Source reduction- Strive to use materials with minimal packaging.
- Responsibly manage material selection, use, consumption and disposition to minimize environmental impacts.
- Housekeeping- Keep construction site or work areas clean, orderly and free of debris on a daily basis.
- Cooking wastes are to be properly disposed of according to regulations.
- Medical wastes are to be properly disposed of according to regulations.

SITE RECLAMATION AND CLOSURE

- Restore any natural areas that are impacted by the installation and removal of temporary facilities associated with the Salt Lake 2002 Winter Olympics.
- Recontour sites to blend in with existing topography.
- Minimize soil loss through installation of Best Management Practices (BMP's) or other appropriate erosion control methods.
- Use native plants for revegetation as appropriate.
- Use only certified pure live seed.
- Eliminate or minimize the introduction of noxious weeds by cleaning equipment and vehicles prior to use on sites undergoing reclamation.
- Control the spread of noxious weeds through spraying or other appropriate means.

STORM WATER

- A Storm Water Pollution Prevention Plan and UPDES permit are required for construction activity including clearing, grading and excavation, except those operations that result in disturbance of less than 5 acres total land, unless the disturbance is part of a larger common plan of development (R317-8-3.8(6)(d)10) or the activity has the potential to significantly contribute pollutants to waters of the State.[1]
- Regulations require Best Management Practices to reduce potential pollutants (dirt, fuel, trash) in storm water runoff.
- Best Management Practices include placement of: straw bales, silt fence, sediment ponds, earth dikes, check dams, subsurface drains, pipe slope drains, rock armoring, seeding, picking up trash, attention to fueling and proper spill reporting/clean up.
- All dirt must remain on the construction site. Dirt tracked off into streets must be routinely removed (swept back onto site).
- Sediment must be removed from traps or ponds when design capacity has been reduced by 50%.
- Litter, construction debris, and construction chemicals/fuels exposed to storm water shall be picked up prior to anticipated storm events or otherwise prevented from becoming a pollutant source for storm water discharges.
- Routine site inspections should be preformed by the contractor. SLOC will also perform inspections at the Utah Olympic Park, Utah Olympic Oval and Soldier Hollow facilities with observations noted on an inspection form. Contractor is required to respond to issues identified in inspection reports no later than 7 calendar days following the inspection.

[1] Beginning in March 2003, a UPDES permit and Storm Water Pollution Prevention Plan will be required for disturbance of land greater than or equal to 1 acre unless the operator can certify that the value of the rainfall erosivity factor is less than 5 during the period of construction activity or that storm water controls are not necessary based on an EPA approved TMDL for the pollutant(s) of concern or (for non-impaired waters) that an equivalent analysis has been prepared. It does not include routine maintenance to maintain the original line and grade, hydraulic capacity or original purpose of the facility.

FUGITIVE DUST AND AIR EMISSIONS

FUGITIVE DUST

- The Fugitive Dust Rule (R307-309) requires a Dust Control Plan for all sources whose activities or equipment have the potential to produce fugitive (airborne) dust along the Wasatch Front (Davis, Salt Lake and Utah Counties and Ogden City).

- For areas located outside the Wasatch Front, steps to minimize fugitive dust are required (however, no formal plan is required) (R307-205).

- For sites located along the Wasatch Front:
  -opacity caused by fugitive dust shall not exceed 10% at the property boundary and 20% on site except when the wind speed exceeds 25 mph and the owner or operator is taking appropriate control actions (R307-309-2).

- For sites located elsewhere in state:
  -Fugitive emissions from sources constructed after 4/25/71 shall not exceed 20% opacity.

- Construction sites > ¼ acres shall prevent, to the maximum extent possible, material (sand, gravel, soil, etc.) from being deposited onto any paved road. If material is accidentally deposited, it shall be cleaned up promptly (R307-309-6).

- Control fugitive dust from roads, parking areas, construction sites with water or other suitable dust suppression agent (not used oil).

FUGITIVE EMISSIONS

- For sites located along the Wasatch Front:
  -Fugitive emissions from any source shall not exceed 15% opacity (R307-309-2).

- For sites located elsewhere in state:
  -Fugitive emissions from sources constructed after 4/25/71 shall not exceed 20% opacity (R307-205-2).

PERMITTING

- Businesses are exempt from air permitting requirements if they will not emit more than:
  -5 tons per year of SO_x, NO_x, CO, PM_{10}, O_3, or VOCs;
  -500 pounds per year of any single hazardous air pollutant (HAP);
  -2000 pounds per year for any combination of HAPs
  -they are not regulated by any standard or requirement of Section 111 (New Source Performance Standards) or Section 112 (National Emission Standards for Hazardous Air Pollutants) of the Clean Air Act.
  -they do not have the potential to be a major source.
- The business must still file a “Small Source Exemption Registration” with Utah Division of Environmental Quality (R307-413-2).

- Do not leave vehicles or equipment running unattended for long periods of time.

EXEMPTIONS

- Exemptions (R307-413-4) from Notice of Intent and approval order requirements of R307-401:
  1. Fuel burning equipment in which combustion takes place at no greater pressure than one inch of mercury above ambient pressure with a rated capacity of less than 5 million BTU/hr and are fueled by natural gas, LPG, or mixed gas;
  2. Comfort heating equipment such as boilers, water heaters, air heaters and steam generators with a rated capacity of less than 1 million BTU/hr if fueled only by fuel oil numbers 1 – 6;
  3. New parking areas of less than 600 vehicles capacity or modified parking areas increasing capacity by less than 350 vehicles.

- Steam generating units for which construction, modification, or reconstruction commenced after June 9, 1989 that generate <10 million BTU/hr (< 2.9 megawatts) are exempt from federal regulation.

NOISE and LIGHT

- Immediately report any noise or light complaints filed by neighbors to a supervisor who will then notify SLOC environmental contacts:

Diane Conrad:	212-2160	244-2160 (cell)	715-8001 (home)
Mary Barraco:	212-3932	244-3932 (cell)	816-1011 (home)

- Minimize, to the extent possible, noise during the period 7 AM to 10 PM.

- After 10 PM, equipment and other noise is prohibited in residential and commercial land use districts unless a permit is first obtained.

- Commercial power equipment rated at more than 5 HP can not be used in residential or commercial districts between 10 PM and 7 AM.

- The maximum permissible sound levels for Salt Lake Valley are:

Use District	10 PM to 7 AM	7 AM to 10 PM
Residential	50 dB(A)[1]	55 dB(A)
Commercial-Agricultural	55 dB(A)	60 dB(A)
Industrial	75 dB(A)	80 dB(A)

- Permit applications requesting relief from noise restrictions associated with special events shall be submitted to the appropriate municipality in the Salt Lake Valley and the County Health Department at least 30 days prior to the event.

VEGETATION

- Unauthorized cutting of trees or tree limbs is prohibited.
- Unauthorized disturbance of vegetation is prohibited.

[1] Decibel measured on the A-weighted network with a sound-level meter.

WATER RESOURCES

- Conserve water resources.
- Never cross a stream (or wetlands) or work in a stream (or wetlands) with a piece of equipment.
- Do not work within 50 feet of a stream bank.
- Report to your supervisor any discharge of material (dirt, fuel, trash) to waters or dry gulches.
- Any fuel that causes a sheen on surface waters must be reported to the EPA and state via your supervisor and SLOC.
- Prevent potential surface and ground water contamination by proper spill reporting and clean up.

WILDLIFE

- Conduct operations to minimize impacts to wildlife.
- Do not harass or otherwise intentionally disturb wildlife.
- Report any unusual wildlife sightings, raptor nests or human/wildlife interactions to your supervisor. Raptor nests in the vicinity of construction must be reported to the U.S. Fish & Wildlife Service.
- Report any wildlife mortalities to your supervisor who will report them to SLOC environmental contacts:

Diane Conrad:	212-2160	244-2160 (cell)	715-8001 (home)
Mary Barraco:	212-3932	244-3932 (cell)	816-1011 (home)

CULTURAL ARTIFACTS

- Cultural artifacts (arrowheads, rock drawings and human remains) and historic properties on public lands are protected by law (Natural Historic Preservation Act and Native American Graves Repatriation Act).
- Stop work immediately and report any findings of cultural artifacts to your supervisor and SLOC environmental contacts. Work stoppage may be curtailed until the area is cleared by a state archeologist.

Appendix D

- *Pre-Games and Games-Time*

Inspection Forms

- *SLOC Request for Bids for Compliance Oversight*

Weekly/Biweekly Inspection Report
SLOC Venues

VENUE:	DATE
Inspector's name:	SLOC Site Manager:
Inspector's signature:	Report received by:
Agency contacts since last inspection:	

Storm Water			[1] 1- High Priority 2 3 4- Low Priority
Location	Measure Inlet/Outlet protection, check dams, erosion control mats/soil guard, silt fence, sediment basins and traps	Corrective action	

[1] Risk Designation. Each inspection finding and observance will include a designated "risk" factor based on the inherent risk of liability and the internal environmental controls to minimize the risk. The internal risks of concern are risks (1) to human health, (2) to the environment, (3) of legal or financial liability, and (4) of adverse publicity. While the particular risk of concern need not be identified, each finding and observation should be designated with a numeric risk -- designating priority and gravity -- using the following scale:

		INHERENT RISK	
		Low	High
INTERNAL CONTROLS	Strong	4th	2nd
	Weak	3rd	1st priority

Vehicle tracking of soil from construction onto paved roadways	
Storm water inspection reports timely and reflect actual conditions	
Housekeeping (describe conditions)	
Additional field notes:	
Air Quality	
Visible emissions from fugitive dust (max 15%-WF/20%-WB opacity)	
Paved roads free of sand, gravel, soil	
Recordkeeping	
Generator emissions	
Solid Waste	
Handling of construction materials	
Condition of dumpsters	
Hazardous Materials/Used Oil/Hazardous & Universal Waste	
Hazardous materials on site (types and quantities)	
Storage area inspection: – Condition of labeling – Containment – Housekeeping and management – For waste: accumulation start date	
Management of used oil (labeling, containment)	

Pesticides/Herbicides (use, labeling, containment)	
Fuel storage (spills, secondary containment)	
Spills (emergency plan in place, quantities spilled, actions, notifications)	
Surface Water	
Stream alteration permit requirements	
Clarity of water, estimated flow	
Stream channel inspections	
Miscellaneous	
Generators (spills, noise)	
Waste water	
Noise/Light (any complaints, hours, excessive)	
Vegetation (unauthorized cutting of trees/limbs, unauthorized disturbance of vegetation)	
Wildlife (sightings, mortalities)	
EPCRA (MSDS, notification list)	
Cooking wastes	
Medical wastes	
Recycling/reuse	

COMMENTS:

2002 OLYMPIC WINTER GAMES AND PARALYMPIC GAMES

DAILY ENVIRONMENTAL COMPLIANCE INSPECTION REPORT

VENUE:	**DATE:**
Inspector's Name:	**SLOC Site Manager:**
Inspector's Signature:	**Report Received By:**
Agency contacts during inspection:	

Generators/Propane/Power:_____

Fuel Storage/Chemical Storage/Spills/Leaks:_____

Waste Removal/Dumpsters/Houskeeping:_____

Portalets/Comfort Stations:_____

Snow Removal/Storage and De-icer Use/Storage:_____

Surface Water/Air Quality Issues:_____

Kitchen Areas/Grease Traps/Grey Water:_____

Update Environmental Kiosk:_____
Check Kodak Effluent Monitoring Logs:_____
Condition of WRCS Compound:_____
Condition of Logistics Compound:_____

Salt Lake Organizing Committee
for the Olympic Winter Games of 2002

299 South Main Street, Suite 1300
P.O. Box 45002
Salt Lake City, Utah 84145-0002 USA

Telephone: 801-212-2002
Facsimile: 801-364-7644

www.saltlake2002.com

SALT LAKE 2002

REQUEST FOR BID

SCOPE OF WORK
FOR COMPLIANCE OVERSIGHT
DURING OLYMPIC BUILD OUT

The goal of the Compliance Oversight Program is to reduce environmental risks posed by construction activities associated with the Salt Lake Organizing Committee's Olympic build out through identification of potential environmental issues and working with venue staff to correct the issues before they come to the attention of regulatory agencies or pose a threat to human health or the environment.

The Salt Lake Organizing Committee (SLOC) Environment Department is seeking a time and material bid to perform the following work:

1. Provide experienced personnel for regulatory oversight during Olympic build out at the following locations:

Wasatch Front- Perform inspections once a week for the period August 20th to November 30th. Estimate that the Oval, E-Center and Delta Center will require one 6 hour day including travel time. Estimate that Peaks and Ogden Ice Sheet will require one 6 hour day including travel time.

Utah Olympic Oval- Kearns
Peaks Ice Arena- Provo
E Center- West Valley City
Ice Sheet Ogden- Ogden
Salt Lake Ice Center (Delta Center)- Salt Lake City

Wasatch Back- Perform inspections twice a week for the period August 20th to November 30th. Estimate that the venues can be inspected in two seven hour days (twice a week) including travel time.

Soldier Hollow- Midway
Deer Valley Resort- Park City
Park City Mountain Resort- Park City
Utah Olympic Park- Park City

The work requires the contractor to inspect the site and document findings on a site inspection form. If potential regulatory issues are identified, the contractor will discuss the issues with the SLOC Site Manager and offer solutions. A copy of the inspection form will be left with the SLOC Site Manager (or his designee). The contractor will track resolution of issues and report weekly to the SLOC Venues Compliance Manager via e-mail, FAX and/or verbal reports (due Friday's by 10 AM). The contractor will immediately contact the Venues Compliance Manager if significant issues are identified. At no time will the contractor be allowed to Stop Work at a construction site.

Salt Lake Organizing Committee
for the Olympic Winter Games of 2002

299 South Main Street, Suite 1300
P.O. Box 45002
Salt Lake City, Utah 84145-0002 USA

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www.saltlake2002.com

SALT LAKE 2002

2. Work with Venue Compliance Manager to develop a "Site Inspection Form" for the Wasatch Front venues and the Wasatch Back venues (estimate 4 hours).

3. Complete an "Environmental Permit and Plan Summary" sheet for each venue. The format for this sheet has already been completed and much of the information gathered. The contractor will be required to secure copies of any plans or permits not yet in SLOC's possession (estimate 80 hours).

4. As mentioned in #1 above, collate weekly inspection information into a concise weekly report and discuss with Venues Compliance Manager as appropriate (estimate 3 hours per week).

5. Bi-weekly meeting with Venue Compliance Manager (estimate 8 hours/month).

6. Miscellaneous meetings (pre-program and post-program) estimate 8 hours total.

7. Compile final report on Compliance Oversight Program that satisfies requirements of federal bid document (estimate 80 hours). Supply 8 copies of the document.

Please provide a time and materials bid with an estimated total cost for the program. Bids must be received no later than Noon on Monday, August 13th . Please provide resumes of proposed compliance inspectors and a brief description of other compliance oversight programs your company may have performed. If there are any questions please contact Mary Barraco at (801) 212-3932. Bids can be submitted via e-mail or FAX to:

Mary Barraco
Venues Compliance Manager
Salt Lake Organizing Committee

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Appendix E
Olympic Winter Games and the Environment

TRENDS
ABA SECTION OF ENVIRONMENT, ENERGY, AND RESOURCES NEWSLETTER

Olympic Winter Games and the environment

BY CRAIG D. GALLI

This February, Salt Lake City hosted the 2002 Winter Olympics for 17 days. The Olympic Games pose many formidable environmental challenges, including waste management, energy consumption, transportation, materials recycling and major construction projects. Additionally, the mountainous locations for many of the events are particularly susceptible to damage from the sudden influx of people and related increases in traffic and waste production.

While prior Olympic Games may have struggled to meet these environmental challenges, the 2002 Winter Olympics has been the beneficiary of unprecedented environmental management efforts in all stages of planning and implementation. This level of commitment to environmental protection has its origins in the principles and directives of the International Olympic Committee (IOC) itself.

In 1994, the IOC added "Environment" as the third principle of "Olympism" (to complement the other two principles of "Sport" and "Culture") and in December 2000, the IOC issued the "*Olympic Movement's Agenda 21: Sports for Sustainable Development*" to integrate the concept of sustainable development into the Olympic Games. Consistent with these IOC objectives, the Salt Lake Organizing Committee (SLOC) for the 2002 Olympic Winter Games committed early on to leave an "environmental legacy" that future Olympics could follow.

Indeed, Salt Lake City was the first host city to have its bid evaluated under IOC environmental criteria and SLOC won its bid to host the Games based in part on the minimal effects the Games would have on Utah's environment. The organizing committee also committed in its contract with Salt Lake City to "carry out their obligation and activities . . . in such a manner that they comply with applicable environmental legislation and wherever possible, serve to promote the protection of the environment."

Five major aspects of SLOC's environmental program for the 2002 Olympics are described below and sharply distinguish this Winter Olympic Games from previous events. They include SLOC's environmental platform, impact avoidance measures, environmental management system (EMS), environmental auditing performed as part of the SLOC EMS and environmental education and enhancement programs.

Environmental platform

In 1995, SLOC's Board of Trustees approved a detailed Environmental Platform developed by its Environmental Advisory Committee outlining how SLOC would conduct business relative to the environment to ensure a lasting Olympic environmental legacy for years to come. The following summarizes the 12-point Environmental Platform:

1. *Management.* To integrate environmental sensitivity into every aspect of the Games in its administration through budgetary, organizational and procedural means.
2. *Environmental design and construction.* To ensure that design and use of Olympic facilities adequately assess and minimize environmental impacts and complement natural surroundings.
3. *Temporary facilities.* To ensure that temporary facilities can be reused in a manner that benefits the entire community. Also, to restore any natural areas that are affected by the installation and to remove such facilities.
4. *Energy and water conservation.* To build facilities and adopt practices that conserve our valuable natural resources.
5. *Materials management.* To responsibly manage materials selection, use, consumption and disposition to minimize environmental impact.
6. *Official suppliers, contractors and sponsors.* To work with suppliers, contractors and sponsors to ensure that products and the methods in which they are delivered are environmentally responsible.
7. *Cultural events and ceremonies.* To use high profile events to further environmental education and to serve as a model for environmentally responsible event management.
8. *Sports and sports organizations.* To encourage the Olympic teams and sports organizations to develop environmental messages and profiles that are suited to the sport itself and to the Olympic spirit.
9. *Environmental education.* To realize the Olympics as a unique vehicle to educate both children and adults regarding environmental issues.
10. *Transportation.* To minimize transportation effects, their related environmental problems, encourage mass transit and other environmentally responsible modes of transportation.
11. *Lodging and food services.* To provide environmentally sensitive lodging and food services for our visitors.
12. *Environmental monitoring.* To monitor the progress of SLOC in meeting its environmental goals.

Impact avoidance

As with any construction and operation of spectator sport venues, certain environmental impacts are unavoidable and inevitable. Impact *avoidance* has long been recognized as the preferred means to address potential impacts of any project. In this regard, the organizing committee sought to *avoid* impacts at every phase of the planning process.

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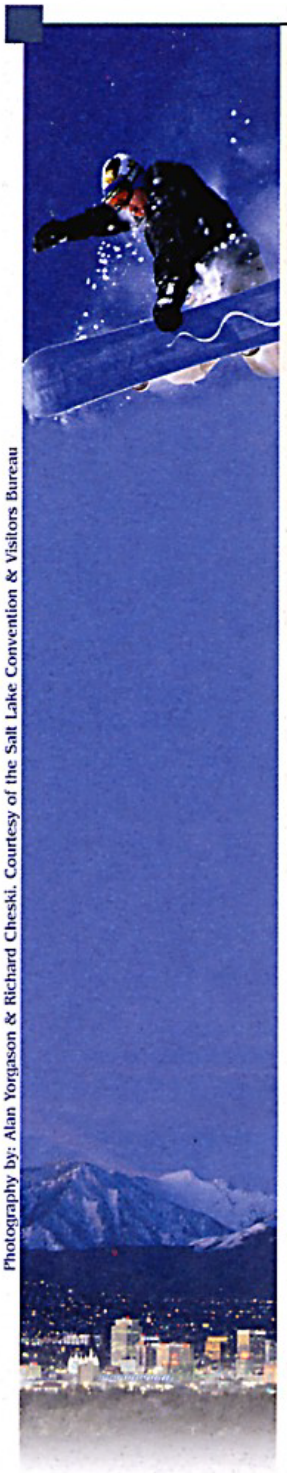
Top Image Photographed by: Alan Yorgason



Photography by: Alan Yorgason & Richard Cheski. Courtesy of the Salt Lake Convention & Visitors Bureau

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Winter Games

Three examples are worth mentioning.

First, SLOC's bid proposal included the use of as many existing facilities and infrastructure as possible to avoid impact from new construction. This goal has largely been achieved. Relatively few new facilities were built to accommodate the 2002 Olympic Winter Games. Many new facilities that were built are temporary, to be dismantled after the Olympics.

Second, SLOC agreed to avoid locating any venues in Big or Little Cottonwood Canyons in order to preserve the integrity of important and fragile watershed areas and ecosystems, despite the presence of existing world class ski resorts in these canyons just minutes from Salt Lake City.

Third, after concerns were raised by a number of public interest groups, SLOC established a working group to reevaluate the desirability of relocating the cross-country and biathlon venue that had been proposed in the drainage of Little Dell Creek in the vicinity of a wetlands mitigation area. The working group consisted of a variety of stakeholder representatives and professionals who evaluated 11 other potential locations. As a result of this effort, SLOC dropped the Little Dell site and through a public process selected Soldier Hollow as the cross-country and biathlon venue based largely on environmental protection considerations.

Environmental management system

SLOC prepared a detailed EMS that tracks the ISO 14000 EMS standard. To implement SLOC's EMS and other environmental programs, SLOC has employed a full-time staff of environmental professionals who work with and provide training to SLOC venue managers, contractors, suppliers and volunteers to ensure that all comply with their environmental obligations. The practice of past Olympics has generally been to outsource environmental management responsibilities to contractors. In contrast, SLOC's EMS imposes environmental obligations at every level of SLOC's management and employees.

Environmental audit program

A key aspect of SLOC's EMS is the environmental audit program. SLOC has an in-house environmental compliance officer who personally conducts inspections of Olympic venues and other Olympic-related facilities. SLOC also has engaged outside environmental auditors to supplement the audits and inspections performed by SLOC personnel. Even though many venues and facilities are owned and operated by third-parties, all have submitted to SLOC's environmental inspections. In some instances, SLOC has required these companies to improve their environmental compliance or implement good management practices. Moreover, SLOC has voluntarily disclosed to the EPA and the Utah Department of Environmental Quality conditions discovered during audits and cooperated to immediately make appropriate corrections.

Environmental education and enhancement

SLOC has implemented more than a dozen environmental education programs and environmental enhancement projects. Several merit special mention.

First, SLOC partnered with NASA on the "Urban Heat Island Effect" project. NASA conducted overflights of the Salt Lake Valley and Olympic venues, photographing the area in infrared and visual bands. The result was a "heat map" of the valley and SLOC venues identifying the hottest locations. SLOC used the NASA data to identify hot areas in which to plant trees. SLOC with its partners have planted more than 100,000 trees in Utah and 18 million worldwide.

Second, working with the Leonardo Academy in Madison, Wis., SLOC identified and projected its entire energy use and consumption during the Winter Games and quantified all of SLOC's emission reduction efforts. SLOC, O2Blue (a local Utah company that trades air emissions) and the Leonardo Academy have secured emission reduction credits greater than the amount of emissions expected to be generated by the Games. They will retire the credits in the name of the XIX Olympic Winter Games, thus allowing the Games to become the first in modern history to achieve a zero or net negative air emissions. The zero net emissions goal forms part of SLOC's Air Quality Plan, the first ever prepared for an Olympic Games.

Third, SLOC has conducted, in partnership with local governments and the U.S. Army Corps of Engineers, projects to enhance habitat for aquatic wildlife and migratory birds. Fourth, in partnership with Bill Nye "the Science Guy," SLOC produced a video that explains desert watersheds, weather inversions, air pollution and recycling to children.

Fifth, each year SLOC presents the "Spirit of the Land Award" to recognize individuals and organizations for their outstanding efforts in environmental protection and education. For its 2002 awards program, SLOC received 107 applications from 17 countries and 25 states. Sixth, in 1994, SLOC established the Environmental Advisory Committee consisting of government, business and public interest group stakeholders to advise SLOC on environmental issues relating to materials management, education, sustainable facilities, monitoring, transportation, procurement, lodging and athlete involvement.

While some groups have still objected to the environmental effects of the 2002 Olympic Winter Games despite SLOC planning and adherence to IOC principles, no one can deny that SLOC has done more to protect and enhance the environment than any prior Olympic organizing committee. "Protecting and enhancing the environment is integral to every aspect of the Salt Lake 2002 Olympic Winter Games," according to Diane Conrad Gleason, SLOC's environmental program director. The environmental standard by which future Olympics will be measured has undoubtedly been raised by SLOC's multifaceted environmental strategy for the 2002 Winter Olympic Games.